# The Iron A

#### A Review of the Hardware, Iron and Metal Trades.

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Vol. XXIV: No. 10.

New York, Thursday, September 4, 1879.

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Patent Adjustable Inclined Press.

The Stiles & Parker Press Company, of Middletown, Conn., are building a patented form of inclined press for all kinds of punching and stamping that is worth the attention of manufacturers, especially those who have work to execute in sheet metals, when work that can be done in the same press cometimes requires an inclined and at

when work that can be done in the same press sometimes requires an inclined and at others a horizontal bed.

Fig. 1 represents the adjustable bed press when set upon an incline. In this position the press is convenient for work of all kinds that does not pass through the die. By such an arrangement the operator is enabled to produce finished work, formed and stamped as well as cut, in as little time as it would commonly take to cut a plain

In these presses the bearings are planed out from the bed of the press. The surfaces are then The surfaces are then scraped until they are true, the same process being used as is employed in making surface plates. This hardens the surface and greatly increases the durability of the bearings. The cross-head, or die holder, that works in these guides is of steel. This combination of steel and scraped cast iron makes one of the best and most durable of bearings. Bearings of this kind show a most surprising wear, and work as easily and smooth-ly as almost any known combination of surfaces.

The adjustment of the slides in the guides is made by a very neat arrange-ment of a V-shaped liner, put into the guide in such a way that it takes up the wear upon the side where the wear comes. As the diagonal pressure in these presses is, owing to the presses is, owing to the length of the connecting rod, or pitman, very slight, the wear is merely nom-

The pressure from the eccentric is transmitted to the slide in the form of compressive strains entire-ly, the end of the pitman

bearing in a cup-shaped hollow, the pin merely serving to lift the slide by. The adjustment of the press is secured by a couple of eccentrics, one of which is movable about the other. By loosing the clamp screw shown in the top of the pitman, the outer eccentric may be turned so as to obtain any desired throw, turned so as to obtain any desired throw, after which the screw is set up and the press is ready for operation. This method gives exceeding delicacy of adjustment, and makes the press capable of doing work of the most difficult character.

These presses are built in a great variety

zes, and are capable of doing work of finds. In workmanship they are very To those accustomed to the workshops of New England, it is sufficient to say that they can do "gun work," while they are amply strong to do any work that could be amply strong to do any work that could be expected from a press of that weight. Presses of this kind are capable not only of punching plate iron, but of decorating silverware. The two operations are fair examples of the extremes of coarse and fine work, though both require about the same amount of power and equally heavy presamount of power and equally heavy pres-sures. Taken altogether, the press will be found an exceedingly valuable one to a large class of manufacturers. The patented fea-tures of the press are the hinged frame al-lowing the bed to be inclined, the method of taking up lost motion, and numerous points in connection with the adjustments of the

Novel Cause of a Fire-Damp Explosion.—In a late number of La Corres-pondence Scientifique a report from Prof. Rurat on the explosion at the Frameries Colliery, in Belgium, states that more than 6,500,000 cubic feet of fire damp must Colliery, in Belgium, states that more than 1,500,000 cubic feet of fire damp must of the breaker.

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La Nature cantains the following note that 200 safety lamps (Musseler's) were extinguished without causing ignition.

The gas issuing from the shaft caught fire out-says: If perpetual motion be simply defined

side the mine (possibly from the engine furnace) and burned with an enormous flame. When the supply was becoming exhausted by writue of its inertia alone, I the burning gas ran back into the interior of the mine, followed in its retreat by attempting exhausted by a sive explosions. The whole occurrence is considered unexampled in the annals of coal mining.

SCIENTIFIC AND TECHNICAL.

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According to the Annalen der Physik, Erhard and Schertel have determined the following

MELTING POINTS OF GOLD AND SILVER ALLOYS

in a furnace heated with a Schlösing blow-vire. The welfvire work and the supply was becoming exhausted by virtue of its inertia alone, I the burning gas ran back into the interior of the burning gas ran back into the interior of the burning gas ran back into the interior of the burning gas ran back into the interior of the burning gas ran back into the interior of the motion which resistances have the burning gas ran back into the interior of the burning gas ran back into the interior of the burning gas ran back into the interior of the burning gas ran back into the interior of the burning gas ran back into the interior of the burning gas ran back into the interior of the burning gas ran back into the interior of the burning gas ran back into the interior of the burning gas ran back into the interior of the burning gas ran back into the interior of the burning gas ran back into the interior of the burning gas ran back into the interior of the burning gas ran back into the interior of the burning gas ran back into the interior of the burning gas ran back into the interior of the burning gas ran back into the interior of the burning gas ran back into the interior of the burning gas ran back into the interior of the burning gas ran back into the supply was realized by virtue of its inertia alone, I the burning gas ran back into the interior of the motion, I the burning gas ran back into the interior of the burning gas ran back into the interior of the burning gas ran back into th

Mercantile Failures in England. — The mercantile failures in England during the first half of 1879 numbered 8990. During the whole of 1878, the failures numbered 15,059, and during 1877, 14,022. Commenting on the reports of these failures, the London Times says that in two chief industries there are signs that the suffering has been severe. The failures been severe. The failures in the cotton and in the iron trades during the past six months have been in excess of their due proportion. In both of them, the failures for 1878 were more numerous than for 1877. In spite of these clear-ances, the failures for 1879 have been more numerous still. The weak firms which have been swept away left others standing, which have now been swept away after them. The destruction has been terrible. The one favorable sign is that the losses of June have been far less than those of the previous months. The turning point may possibly have been reached, but the evidence as to this is not yet convincing. The bank-ruptcy and insolvency laws of the United States have than those of other na-tions. In England the conclusion has recently been arrived at that the bankrupt law in existence affords too much encouragement to negligence and fraud on the part of debt-ors, and a bill reported in Parliament proposes

roads which carry the ore to the sea.

The center of the Somorrostro iron district is situated about 7½ miles west-northnot likely to receive, total dividends west of Bilbao, and at an equal distance from the shipping stages on the river Nervion, between Bilbao and the sea; but the known deposits are scattered over a large area, some fault of the trustee, and not of the bank rupt. Another clause requires that the bank rupt. rupt. Another clause requires that the bankrupt, if a trader, should have kept proper account books for three years prior to the filing of his petition, and not greatly increase his liabilities by carrying on trade while insolvent. Failing in either of these respects, he is precluded from a discharge. A third provision is to the effect that a bankrupt, whether a trader or not, cannot be freed from his liabilities if he has failed in consequence of hazardous speculations or unjustifiable extravagance in living.

> The Copper Cent .- As the old "red cent" has now passed out of use, and, ex-cept rarely, out of sight, like the "old oaken bucket," its history is a matter of sufficient interest for preservation. The cent was first proposed by Robert Morris the great first proposed by Robert Morris the great financier of the revolution, and was named by Jefferson two years after. It began to make its appearance from the mint in 1792. It bore the head of Washington on one side and 13 links on the other. The French revand 13 links on the other. olution soon created a rage for French ideas in America, which put on the cent, instead of the head of Washington, the head of the Goddess of Liberty—a French liberty, with neck thrust forward and flowing locks. chain on the reverse side was the olive wreath of peace; but the French liberty was short lived, and so was her por trait on our cent. The next head or figure

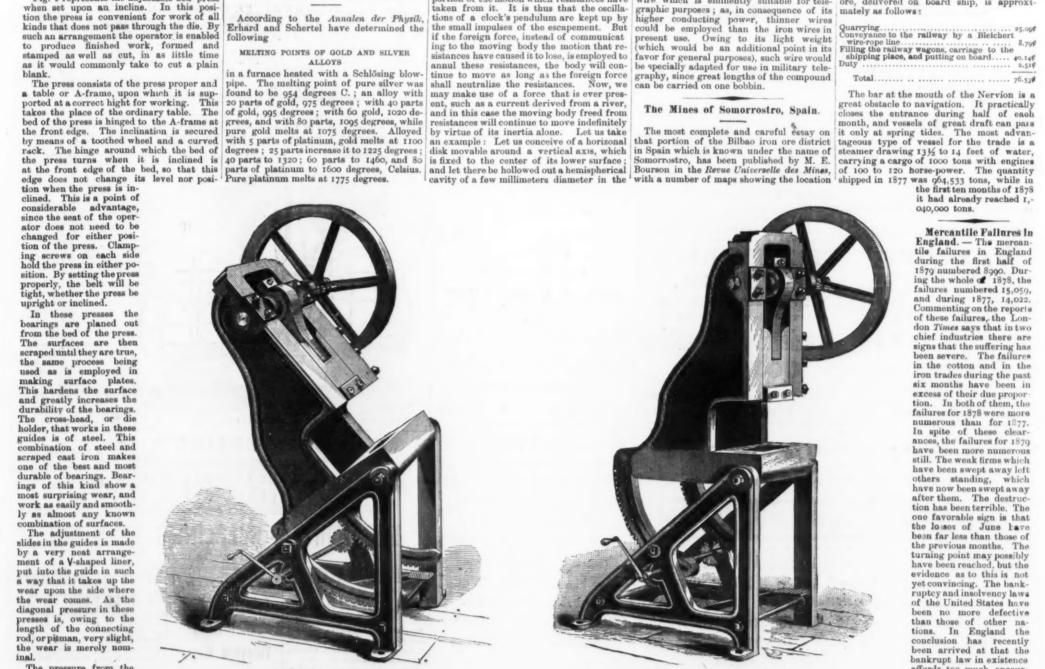


Fig. 1.-Press in an Inclined Position.

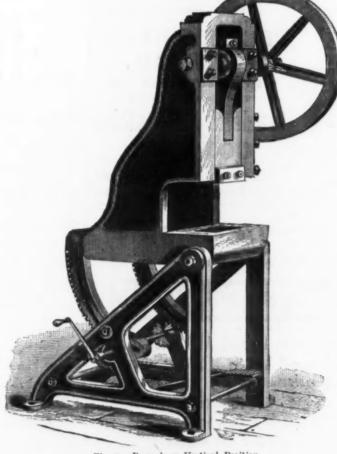


Fig. 2.—Press in a Vertical Position.

PATENT ADJUSTABLE INCLINED PRESS, BY THE STILES & PARKER PRESS CO.

Before the Société des Ingénieurs Civils. M. Asselin described his method for the

PURIFICATION OF FEED WATER for boilers, and the water for dyeing and washing purposes. It consists in the employment of oxalic acid, or, rather, of alkaline oxalates. These are added to the water, when a corresponding quantity of oxalate of lime is formed. By an inexpensive treatment of this product, alkaline exalate is reproduced for further applica-tion. The raw material is exalate of lime, which is treated at a boiling temperature with carbonate of soda. By a double decomposition there are formed carbonate of lime, which is insoluble, and soluble oxalate of soda. The second is the purifying agent, and is efficacious for eliminating the salts of

attached a platinum point which touches the surface of mercury held by a small ves-The current passes through the wire and over that part of the wire through which the current passes when all the ap-paratus in its normal state is a small magnet. This magnet, acting on the current, causes vibrations in the wire, and so breaks and makes contact. The number of vibrations can be readily modified by changing the length of the wire, and as high a num. ber as 1000 breaks per second can be ob-tained. By passing an intermittent current over the wire, it can be set in vibration without the intervention of mechanical means. This happens when the fundamental note of the string is in unison with the pitch

suppose the apparatus located by the side of a river, where it is put in communication with the latter by means of a tube leading from a reservoir placed at a level lower than that of the lowest tide, the reservoir being constructed so as to furnish by means of an rifice at the bottom, a uniform and strong flow, which shall be able, when we wish it to cause the disk to revolve very swiftly This being done, before we allow our water course to act, let us spin a top very rapidly, place its point in the small hemistrapidly, place its point in the small hemistrapidly. with a bell glass whose axis coincides with that of the apparatus, and keep this glass firmly in position by some means or other. Finally, by the aid of one current of water, let us set the disk, along with the bell glass, in motion in the same direction as the top ELECTRIC CONTACT BREAKER
is described by Herr F. Niemoller. To the
middle of a wire stretched horizontally is
attached a platinum point which touches
the author of marcury held by a small recwill meet no further resistance at its point will meet no turther resistance at its point, since the support on which it rests is revolving with exactly the same speed and in the same direction; it will no longer experience any resistance from the surrounding air, since the latter will also possess the same angular velocity, and we will thus have the curious spectacle of a top remaining indefinitely in equilibrium on its point, and it will continue to revolve, not because any lost motion is restored to it, but because it does not lose any. lose any. This will be a perpetual mo-tion, according to the definition given at the beginning of this note.

Some special attention has been directed to the use of

center of its upper surface. Now, let us of the large number of mines and the rail- vides that no bankrupt shall have a being close to Bilbao, and others nearly 19 to the north-west. The principal ma is elliptical in shape, about 2½ miles long by 1½ miles wide. Its thickness is unknown, but workings have been carried in it to depths in some places of 246 feet, and in others of toe feet. It consists chiefly of brown hematite, with here and there blocks of unaltered spathic ore. The ore contains in its undried state from 50 to 64 per cent. of metallic iron, with about 1 per cent. of manganese, and little phosphorus or sulphur. It is of cretaceous age, being in some places interposed between undoubted cretaceous strata, and has probably been deposited by hot springs highly charged with carbonate of iron. In some localities the ore crops out on the surface and is obtained by simple on the surface and is obtained by simple quarrying. It is all got by blasting in open workings, and is conveyed, first, by ox carts or by wire tramways to the railway lines, and then by rail to the shipping places. Two systems of wire-rope conveyance are that of Hodgson and that of Bleichin use—that of Hodgson and that of Bleichert. Bleichert's arrangement is the more recently introduced, and, though the more expensive system, is preferred as being cheaper in working and capable of carrying

twice as much ore per day. In it the main cables are fixed, and serve merely as rails for the trams or tubs which are suspended from them to run on, and these are drawn

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The press consists of the press proper and a table or A-frame, upon which it is supported at a correct hight for working. This takes the place of the ordinary table. The bed of the press is hinged to the A-frame at the front edge. The inclination is secured by means of a toothed wheel and a curved rack. The hinger around which the had of

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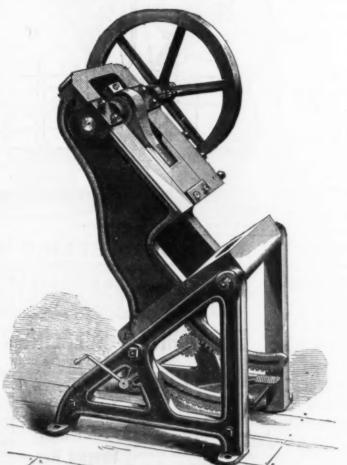


Fig. 1.—Press in an Inclined Position.

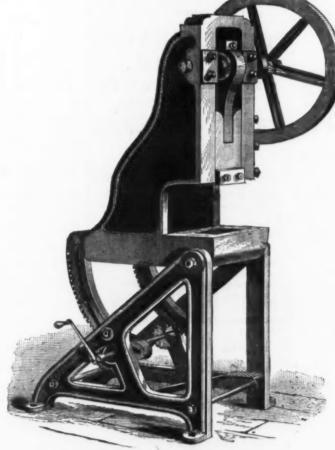


Fig. 2.—Press in a Vertical Position.

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Some special attention has been directed the use of

roads which carry the ore to the sea.

The center of the Somorrostro iron district is situated about 71/2 miles west-northwest of Bilbao, and at an equal distance from the shipping stages on the river Nervion, between Bilbao and the sea; but the known deposits are scattered over a large area, some being close to Bilbao, and others nearly 10 miles to the north-west. The principal mass is elliptical in shape, about 2 is miles long by 114 miles wide. Its thickness is unknown, but workings have been carried in it to depths in some places of 246 feet, and in others of 105 feet. It consists chiefly of brown hematite, with here and there blocks of unaltered spathic ore. The ore contains of unaltered spatnic ore. The ore contains in its undried state from 50 to 64 per cent. of metallic iron, with about 1 per cent. of manganese, and little phosphorus or sulphur. It is of cretaceous age, being in some places interposed between undoubted cretaceous strata, and has probably been deposited by hot springs highly charged with carbonate of iron. In some localities the ore crops out on the surface and is obtained by simple In some localities the ore crops out quarrying. It is all got by blasting in open orkings, and is conveyed, first, by ox carts or by wire tramways to the railway lines, and then by rail to the shipping places.

Two systems of wire-rope conveyance are in use—that of Hodgson and that of Bleich-Bleichert's arrangement is the more recently introduced, and, though the more expensive system, is preferred as being cheaper in working and capable of carrying twice as much ore per day. cables are fixed, and serve merely as rails for the trams or tubs which are suspended from them to run on, and these are drawn

1879 numbered 8990. During the whole of 1878, the failures numbered 15,059, and during 1877, 14,022. Commenting on the reports of these failures, the London Times says that in two chief industries there are signs that the suffering has been severe. The failures in the cotton and in the iron trades during the past six months have been in excess of their due propor-tion. In both of them, the failures for 1878 were more numerous than for 1877. In spite of these clear-ances, the failures for 1879 have been more numero still. The weak firms which have been swept away left others standing, which have now been swept away after them. The destruction has been terrible. The one favorable sign is that the losses of June have been far less than those of the previous months. The turning point may possibly have been reached, but the evidence as to this is not yet convincing. The bank-ruptcy and insolvency laws of the United States have been no more defective than those of other na-tions. In England the conclusion has recently been arrived at that the bankrupt law in existence affords too much encouragement to negligence and fraud on the part of debt-ors, and a bill reported in Parliament radical changes.

vides that no bankrupt shall have a discharge if his creditors have not received, and on proper estimate of the assets are not likely to receive, total dividends amounting to 50 per cent. of the debts, unless the incapacity of the estate so to pay is the fault of the trustee, and not of the bank rupt. Another clause requires that the bankrupt, if a trader, should have kept proper account books for three years prior to the filing of his petition, and not greatly increase his liabilities by carrying on trade while insolvent. Failing in either of these respects, he is precluded from a discharge. A third provision is to the effect that a bankrupt, whether a trader or not, cannot be freed from his liabilities if he has failed whether a trader or not, cannot in consequence of hazardous specula unjustifiable extravagance in living. eculations or

The Copper Cent .- As the old "red cent" has now passed out of use, and, ex-cept rarely, out of sight, like the "old oaken bucket," its history is a matter of sufficient integest for preservation. The cent was first proposed by Robert Morris the great financier of the revolution, and was na by Jefferson two years after. It bega by Jefferson two years after. make its appearance from the mint in 1792. It bore the head of Washington on one side and 13 links on the other. The French revolution soon created a rage for French ideas in America, which put on the cent, instead of the head of Washington, the head of the Goddess of Liberty—a French liberty, with neck thrust forward and flowing locks. The chain on the reverse side was displaced by the olive wreath of peace; but the French liberty was short lived, and so was her portrait on our cent. The next head or figure that succeeded this—the staid, classic dame with a fillet around her hair—came into

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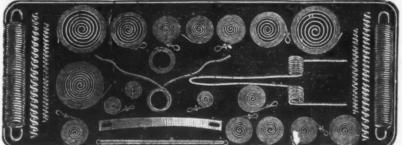
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Among the apparatus which have recently been brought to the notice of metallurgists is the Ponsard steel furnace, or "Forno-Convertisseur," as the inventor calls it.

In the issue of The Law Convertise of the conve In the issue of The Iron Age of Dec. 12, 1878, we printed cuts clearly showing the construction of this furnace; and in our issues of Sept. 26 and Oct. 31, 1878, we published the results of some experiments made lished the results of some experiments made with an experimental plant at Thy-le-Château, Belgium. The furnace combines the principles and the respective advantages of the Bessemer and Siemeus-Martin (or openhearth) systems. The open, circular, inclined and movable hearth is fitted with a clined and movable hearth is fitted with a computation attachment, so arranged that the consumption of coal averaged 230 kilograms per hour. The chemical respectives attachment, so arranged that the pneumatic attachment, so arranged that the tuyeres can be plunged beneath the bath of molten metal and the blast turned on, or again brought above it and the blast shut off by a simple half turn of the hearth, allowing the operation to be prolonged, or shortened, or repeated at pleasure, without shutting of the heat or retarding the manufacture. This gives it the economical advantages of the Bessemer system, without incurring the risk Bessemer system, without incurring the risk of making bad blows, or confining it to the use of pig containing a large percentage of silicon, &c., as is requisite in that process. On the other hand, its construction is such as to afford the advantages of the Siemens-Martin system, with its facilities for the modification of the bath by the addition of materials, and for testing the molten metal any time during the process of manufactures. materials, and for testing the molten metal at any time during the process of manufacture, while it renders the removal of the slag or cinder, as desired, an easy task. While its construction allows of the charge being raised, by gas-firing alone, to quite as high a temperature as can be obtained in the Siemens-Martin or Pernot, the fact that the temperature of the bath can at once be appropriated to the extent of about 1905. augmented to the extent of about 1100° taken at the same time as No. II. Another Fah., by the combustion of carbon and silicon in the pig by the application of the blast, insures for this furnace the power of obtaining the temperature required in ordinary recombined. fining operations with a smaller amount of fuel, thus effecting a saving in both fuel and time, while, if necessary, very much higher temperatures can be reached with facility. These features not only secure great economy in the manufacture of the ordinary grades of steel, but render the apparatus especially valuable in the manufacture of the softer and finer qualities. It can be used for manufacturing steel from pig iron alone, whether phosphoric or not, while a maxi-mum or minimum proportion of scrap or old iron or steel rails can be worked for the the charge be completed, including heating, melting and refining in 4 to 4½ hours, as against from 6 to 8 hours in the Pernot, and from 8 to 10 hours in the Siemens-Martin or property of the last blowing and before the addition of ferromanganese, held 0.06 of carbon and 0.10 of phosphorus. from 8 to 10 hours in the Siemens-Martin furnace. If the metal is charged in a molfurnace. If the metal is charged in a molton state from a b'ast furnace or cupola, the operation of refining by the Ponsard converter may be completed within 1½ le-Château. It shows well the gradual elimination of the impurities of the metal;

The power necessary for running the blow ing engines is not one fourth of that required for the Bessemer, because a pressure of equal to 15 to 10 inches of mercury is quite enough. From 800 to 900 cubic feet of air per minute at this pressure would call for an 8-ton converter, sufficient for say about 30-horse-power. The steam required can be generated by the waste gases from the fur-nace. The 6-ton converter at the works of mace. The 6-ton converter at the works of Messrs. Blondiaux & Co., Thy-le-Château, Belgium, has, in the absence of a special engine, been worked with the blowing machine of the blast furnace, which only works at a pressure of about 8 inches of

mercury.

The hearth of the furnace can be readily detached and run out from beneath and the facilities. detached and run out from beneath and away from the heat, affording facilities for repairing or renewing the lining as often as may be required. As the roof will generally outlast five or six hearth linings, the advantage of being able to have a second hearth ready to be run in without letting down the heat is great, particularly in the treatment of highly phosphoric pig by the new methods, in which the basic lining is rapidly destroyed by the reaction. by the reaction.

Actual experiments have shown that the Ponsard converter is not only adapted to the manufacture of steel of good quality from Bessemer pig, or from Bessemer pig and crap, or o iron or steel rails in almost any proportion, but also from highly phosphoric and sulphurous pig alone, or in combination with scrap iron or steel, and that by its use a very large saving is effected in time, labor and fuel. The following reports and with scrap iron or steel, and that by its use a very large saving is effected in time, labor and fuel. The following reports and analyses give the results of experiments made with the Ponsard converter at Thyle-Château, Belgium, which we will give further on.

No. I gives the composition of the Creusôt pig and rails. No. II the first sample. After pig and rails. No. II the first sample. After No. III the metal was blown for 21 minutes. After No. IV the slag was tapped and the composition of the Creusôt pig and rails. No. II the first sample. After No. III the metal was blown for 21 minutes. As an example of working with a pure

pig we would cite the following from the records of experiments at Thy-le-Château. The charge consisted of 2000 kilograms of Bessemer steel rail scrap, and 3000 kilograms of Cumberland pig, containing by analysis :

Combined carbon. 0.120 Sulphur...
iraphite. 3.450 Manganese
silicon 2.943 Iron...
Phosphorus. 0.008 Titanium. Silicon ..... Phosphorus. 10.30 a. m. 1.40 p. m. 1.45 44 100 form The ferromanganese added held 71 per

cent. of manganese, 6 per cent. of carbon and 23 per cent. of iron.

A second charge made up of the same materials, 4000 kilograms of Cumberland pig and 1500 kilograms of scrap steel, progressed

 5500 kilos charged cold at
 9.00 a.m.

 Hath melted at
 12.15 p.m.

 Blast put on at
 12.25

 Blast taken off and test made at
 1.05

 8c kilos, ferromanganese added at
 1.18

 Steel cast at
 1.21

working phosphoric pig. In this case the pig held:

Four thousand kilograms of this metal, to-gether with 500 kilograms of steel scrap, were melted in two hours. The blast was applied for 25 minutes, and the steel cast after four hours from the time of charging cold. Three thousand nine hundred and sixty-five kilograms of steel, free from phosphorus, of actions during the process are shown by the following analyses of the pig and correspond ing slag of samples, taken during the blow made by M. Osmont, of the Denain and Anzin works, France:

Luxemboura Pia 0.77

No. I was taken after the charge was melted; No. II after blowing 30 minutes, and No. III was the steel cast.

manganese.

No. IV was taken simultaneously with No. I; it was mixed with dolomite. No. V was

Steel. 0,12 none not det. Another phosphoric pig treated was that of Thy-le-Château, which yielded the follow-

ing results: A charge of Creusôt pig was composed of :

			STREET	73					
	T	П.	m.	IV.	7.	T.	VII.	VIII.	H
tal carbon	1.047	1.954	1.472	0.407	C.619	0.150	0.200	0.180	0.405
COD	0.454	0.151	40		1				
nganese	0.324	0.180		0.160	0.125	0.075	0,080	0.075	0.225
osphorus	I.O.I	1.556			K.104	0.500	0,359	0.135	0.033
lphur	0.332	0.380	0.279		0.832	0.235	0.253	0.277	0.267
-		200 000	240 40	83.600	210.00				
CB		33.5=5	0000	20.00	343	****	17.450	14.700	12.23
iming	* * * * *	7.370	2.904	70700	0.372			8.408	
0 OL	****	0.100	10,029	10.215	0.570		14.994	27.108	21.987
Mang		17.484	11 070	7.905	9.672	****	4.500	2.371	11.160
ne	:::	19.850	35.700	35.750	40.300	****	37.100	33.250	32.850
omphoric acid	****	1.236	5.550	5.494	4.226	****	4.962	6.508	2.342
phuric acid		1.567	0,812	0.687	0.750	****	0.250	0.572	1.075
ompain		S. oR.	7.02	8.000	10.304	****	7.333	6.404	6.017

Sulice Su No. III the metal was blown for 21 minutes. After No. IV the slag was tapped and 50 kilograms of lime and 37 kilograms of ore were added. After No. V blast was turned on, and 50 kilograms of lime and 50 kilograms of ore were thrown in. After No. VI, the amounts were 125 and 125 kilograms respectively, and after No. VII, 25 kilograms of each were added and blast was turned on. After No. VIII the cinder was targed and of each were added and blast was turned on.
After No. VIII the cinder was tapped, and
60 kilograms of ferromanganese, holding 70
per cent. of metal, was thrown in. No. IX
shows the finished steel. The samples of
cinder of which the analyses are given were taken simultaneously with the respective samples of metal.

Herr Springer, assistant in the chemical laboratory of the Berlin School of Mines, re-ports the following as the results of analyses of samples delivered to him:

Pr. ct Pr. ct. 

In order to protect the refractory brick of the roof, in dephosphorizing by Mr. Thomas' new method, it was covered with a thin coating of lime, and during the above opera-

In the first experiment, therefore, the operation required 4½ hours, while in the second it lasted 4 hours and 21 minutes.

The following record of analyses and results of working Laxembourg pig may serve as an example of the results obtained in

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against burglars

reports from London state that in the mid-dle of July there were in Burnley 5795 looms idle out of 33,000, and 307,870 spindles out idle out of 33,000, and 307,870 spindles out of 900,000. In the Blackburn district 11,-300 looms were idle out of 52,000; 84,000 spindles were working on short time, and 48,000 had stopped altogether. In the Chor-ley district 1600 looms, owned by two firms, were working on short time. Nearly 20 other firms were running part of their machinery on short time; several had stopped theirs entirely. In the Burry district both the woolen and cotton trades were very de-pressed. The average time of working in the woolen manufactories was only four days out of the week, and 406,000 spindles and 3700 looms were working on short time.

In Stockport the prospect, especially in the weaving department, was said to be almost hopeless. It was computed that only 500, coo spindles and 300 looms were working, against 1,195,000 spindles and 7900 looms five years ago. In Rochdale, it was raid, only five mills were working full time; 500 houses there were tonanticss. The Man-chester Guardian gave statistics to show that the condition of trade in the Rosendale district, where the machinery of the fac-tories is adapted for Indian cotton, was even worse. Out of 100 mills only six-and these

#### " It hammered extremely well and rolled into plate satisfactorily. The tensile strain was 31 tons per square inch, and the elonga

the Ponsard converter, and taken by them for testing. The ingot was run from a charge composed of 2000 kilograms domestic

pig and 4000 kilograms of old steel rails :

tion 2 3-16ths inches in 8 inches, with a reduction of area of 52 per cent., and bent cold to 180 degrees. This is, as near as possible, the same as our best boiler-plate steel made on the Resemble action. made on the Bessemer system.

(To be continued.)

#### The New Eddystone.

The New Eddystone.

The foundation stone of the new Eddystone lighthouse has been successfully laid by the Duke of Edinburgh. The formal commencement of the new structure which is to supersede Smeaton's famous tower was originally put down for the 21st of June, but the roughness of the sea on the day selected compelled the postponement. Smeaton's tower, which for 120 years has withstood the heaviest gales, proving the salvation of many a valuable ship and warning many a mariner off the fatal Eddystone reef, is, it may be said, as firm as ever. Indeed, it is a singular feather in Smeaton's cap, as an English paper has observed, that "the stability of his famous structure should have outlasted that of the rock on which it is based." The tower remains unshaken by the storms, but tower remains unshaken by the storms, but the House Rock on which it stands shows signs of an enfeebled foundation, consequent upon the incessant wear and beating of the ocean upon it. Therefore the corporation of Trinity House determined to erect a new and more commodious structure on the South Rock, the largest of the reef, lying about 120 feet south of the present site. The new tower will be the fourth erected on the reefs in Plymouth Sound. A Mr. Henry Winstanley completed a lighthouse there in 1700, and he was so confident of the firmness of his structure that he declared his wish to be in it during the fiercest storm that could blow. He had his wish, and per-

ished in it during a terrible storm on the 27th of November, 1703.

The new structure is thus described: The new house will be built to contain a light of more extensive radius and greater power. The old tower is 72 feet above the level of high water; the new one is designed to be 130 feet above the level of any spring tide, so that, no matter what storm may rage, the light will be in no danger of being eclipsed. It will have a range of 17% miles, and is expected to overlap the electric light at the Lizard. Besides this, the tower will be considerably enlarged, giving nine rooms in place of the existing four, thus adding to the comforts and conveniencs of the keepers. Tenders were originally asked for the completion of the designs, but all of them were seemingly too high, for the Trinity Board are themselves executing the work, and expect to complete it at a cost of beand expect to complete it at a cost of between £60,000 and £70,000 within the next four years. The direction of the undertaking is intrusted to Messrs. J. Redmond and W T. Douglass, the latter's father, Mr. J. N. Douglass, consulting engineer at the Trinity House, having prepared the designs. About three months have been spent in making the necessary preparations for laying down the foundation. To do this, of course, the tides have to be observed, and these only permit two or three hours' work to be accomplished on any one day. Gangs to be accomplished on any one day. Gangs of men were taken out in the steamship Hercules, originally built for service in erecting a lighthouse at San Serif, in Ceylon. These, as soon as the tide had receded. sufficiently, were landed on the rock, and by means of jumpers and the steam rock drill the rock was rapidly leveled down to the requisite condition. To enable the men to work more easily, a massive dam was constructed around the rock, and every available moment, was devoted to the every constructed around the rock, and every available moment was devoted to the excavation of the ledges for receiving the foundation courses. The form of the tower will be upon Smeaton's principle, and all the stones will be dovetailed, as in the old tower. As was the course pursued by Smeaton, so in the present instance. While he was preparing his foundation he was also bringing around from Portland the stone for the superstructure, and this he stone for the superstructure, and this he worked into its proper form at a yard he established at Milbay, as being the most suitable locality. In the present instance a superior kind of granite was supplied. This was conveyed to a yard at Oreston, near Plymouth, where it is worked so as to fit block into block, and every portion will be errected and tested in this yard prior to its erected and tested in this yard prior to its being conveyed out into the channel to its final destination.

Industrial Distress in England.-Press worse. Out of too limits only six—and these comparatively insignificant—were working full time; 35 were entirely stopped, and the remainder were only running on an average three and a quarter days a week.

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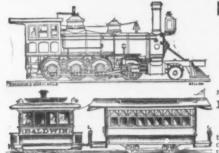
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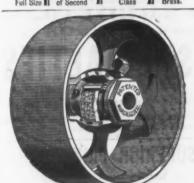
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#### Spanning the English Channel.

The Paris correspondence of the London

in order, therefore, to give as clear an idea as possible of this gigantic enterprise, it will, perhaps, be advisable, after stating that the viaduct is to span the Channel from Cape Grisnez to Folkestone, to begin at the beginning, or, rather, at the bottom of the sea. According to the Admiralty soundings the greatest depth of water to be found on the passage is 55 meters, and this only for a distance of some 4 kilometers, about half-way between the Varne Rock and the French coast. This Varne Rock and its neighbor, the Calbart Reef, are destined to play an important part in the scheme before us. The former, situated at 15 kilometers from Folkestone and 20 kilometers from Cape Grisnez, is some 4 kilometers broad, covered with no more than from 2 to 15 meters of water. Being of solid rock, and in a direct line with the projected viaduct, it offers itself as a natural half-way resting place. This rock has till now constituted one of the greatest dangers to the navigation of the channel. M. De Sainte Anne, however, proposes not only to turn it to account by using it as the foundation for a portion of the greatest hands of the proposes. using it as the foundation for a portion of the viaduct, but also, in conjunction with the Calbart Reef, for the construction of a free port, in which vessels of the greatest tonnage will be able to seek shelter from the storms so frequent in the strait which separ-ates England from France. Both for the construction of this port and for reducing the depth of the water to 20 meters in those places where he will be obliged to construct places where he will be obliged to construct his columns, M. De Saint Anne proposes to adopt the method employed in the construcadopt the method employed in the construc-tion of the Cherbourg breakwater, which consists in dropping huge masses of rock into the sea, and in consolidating them by means of Roman cement. Knowing, how-ever, how continually the Cherbourg break-water was destroyed by the force of the waves, it may be permissible to doubt whether M. De Sainte Anne will find it so easy as he imagines to carry out the construc-tion of his port of refuge in mid-channel; but the objections which apply to the super-structure of the breakwater for the port do not, however, hold good when the same system is employed to reduce the depth of water. On the foundations thus established it

erect to support the viaduct. As to the su-perstructure itself, he proposes to employ three systems. On the Varne Rock and at three systems. On the Varne Rock and at the two extremities, where the water is shallow and the exigencies of navigation permit, he proposes to construct solid stone arches which will have nothing to fear from the fiercest tempest. This massive masonry is to be followed by the girder-bridge system such as is employed in the Charing Cross railway bridge. But to span the deep water he has recourse to the tubular bridge system as applied by Sis Robert Stephenson in the erection of the Menai Bridge, and quite recently by the Americans on a much grander scale for the bridge between New York and Brooklyn. With these three systems com Brooklyn. With these three systems combined, the eminent originator of this gigantic scheme believes that he is not only certain to succeed in crossing the Channel, but also in satisfying the demands of every govalso in satisfying the demands of every government concerning the precautions to be taken to prevent the navigation of the English Channel being rendered even more dangerous than it is at present. Taking the Bretagne, which bears higher masts than any other vessel in the world, he has already applied to the French Admiralty to know if it considered that this vessel would experience any inconvenience in having to pass ence any inconvenience in having to particle under his viaduct, raised to 35 meters above the level of the sea. The answer he received was that, with 150 meters between the plars, and the platform of the viaduct rais to the altitude of 35 meters, neither the Bretagne nor any other vessel would be impeded in its passage. Supposing this scheme and to be done before even the works can be commenced. M. De Sainte Anne promises, however, to commence operations without delay. He informs us that he will not re delay. He informs us that he will not require more than six or seven months for the scientific experiments and the thorough elaboration of his project, and that a sum of 1,000,000 francs will suffice to pay the preliminary expenses. To raise these funds he has already laid his project before the Chambers of Commerce of France and Belgium, from 84 of which he has already received adhesions. M. De Sainte Anne, nevertheless, wishing to give England the option of participating in the honor attached to the achievement of his project, intends to the achievement of his project, intends shortly to visit our shores in order to lay the matter before the government, and to sub mit his plan to the approbation of the tech-

matter before the government, and to submit his plan to the approbation of the technical societies.

Mild Steel and Steel Scrap for Ships and Machinery.—Messrs. Napier & Sons, the famous shipbuilders of Glasgow, have just launched a new steamer, the Pizarro, of 3400 tons displacement. She was built entirely of open hearth mild steel manufactured by the Steel Company of Scotland. The owners have saved 200 tons of hull weight, and can, therefore, carry 200 tons more of paying cargo. The steel was tested carefully before being used, and not a single plate or angle was found defective. For all the smaller smithwork about the engines of the Pizarro (levers, rods, weigh-shafts, &c.), the Pizarro (levers, rods, weigh-shafts, &c.), scrap steel was worked up and forged in the usual way, no difficulty being met with in welding and working.

"THE MOHAWK AND HUDSON MFG. Co."
"WATERFORD, N. Y., Aug. I, 1879."

#### Effect of Altitude in Leadville.

A letter from Leadville, Col., says: I saw but very few cases of intoxication in the streets, though the 300 saloons in the city streets, though the 300 saloons in the city held out their best inducements. I was surprised at this, as one of the notable effects of the great altitude of the place (10,300 feet above the level of the sea) is that all fermented liquors intoxicate more quickly than at lower elevations. The boiling point, owing to the decrease of atmospheric pressure, is much lower than at Chicago, and the alcohol is sooner superised and taken into the cohol is sooner vaporized and taken into the circulation, producing intoxication much quicker.

The boiling point of water here is about 190 degrees, instead of 212 degrees, the effect of which, in boiling beans, eggs, potatoes, &c., is that it requires a long time to cook them in an open vessel, and it is necessary to keep the pot well covered, or the water will vaporize and escape before being raised to the requisite degree of heat for thorough cooking. At this elevation much more air is required to fill and satisfy the lungs, and breathing must be quicker in or-der to properly oxygenize the blood. It is said, too, that after one has been here for some time the coloring matter of the blood becomes darker, being changed from the peroxide to the sesquioxide of iron. With a person suffering under any difficulty or dis-case of the heart, the effect of any severe or any long-continued exertion is to cause a dangerous degree of palpitation, and even with persons entirely well the pulse runs ex-

with persons entirely well the pulse runs extremely high.

There are other and notable facts connected with this altitude. There are few birds seen here—porhaps for the reason that flying is difficult in the light air. The common house-fly, the summer pest of our Eastern housekeepers, is unknown here. There are some of the out-door blue-bottle variety, but they seen languid and tired. It is said also

some of the out-door blue-bottle variety, but they seem languid and tired. It is said also that cats cannot live here. This is probably owing to their delicate organization being unable to resist the rigor of the night air. So the "voices of the night" are not heard in this locality, and bootjacks are reserved for their natural uses.

Another result of the lightness of the air is that, having so little density, it is easily heated by artificial means. Our nights are uniformly cold—so cold that it is uncomfortable to sit without a fire; but a few pine chips or small sticks will warm an apartment very quickly. At the same time the ter. On the foundations thus established it is intended to raise solid masses of masonry to some 40 meters above the level of the sea. This is, of course, a gigantic work, the immensity of which will be seen at a glance when it is remembered that M. de Sainte Anne does not contemplate attempting in his viaduct any span exceeding 200 meters. The distance from Folkestone to Cape Grisnez being 35 kilometers, it will, therefore, be necessary to construct at the very least 175 immense blocks of masonry on which to place the superstructure.

The details of the scheme are not yet deta immense blocks of masonry on which to place the superstructure.

The details of the scheme are not yet decided upon. At the present moment, M. De Sainte Anne confines himself to the assertion that it is practically demonstrated by the Cherbourg breakwater that it is possible to find a solid foundation for as many columns as it may be ultimately found necessary to support the viaduct. As to the support to support the viaduct. As to the support the viaduct of the altitude is the same as that experienced by balloonists, who in as-

that experienced by balloonists, who in asconding from the surface of the earth, even on the hottest day, soon find it necessary to don their overcoats and warmest clothing. and probably in places 25 feet in depth.

dy	Imports:	1879.	1878.
if	Imports :	76,897	90,039
ri-	Bar and plates	28,296	30,593
	Steel	2,788	2,768
188			
ve	All classes		
ed	France, it is well kno	wn, is la	rgely de-
il-	pendent upon foreign	countries	for its
ed	supplies of iron ore. H	ow exten	sive this
he	traffic is will be seen from	n the follo	wing fig-
n-	ures, giving in metrical	tons the	imports
ma	and exports of iron ore	for the	Grat wire

Imports from	1879.	1878.
Belgium	\$5,896	109.248
Germany	. 108,177	47,846
Spain		95,317
Italy.	45,251	45,729
Algeria	155.930	131,543
Other countries	. 1,887	804
Total This, it will be seen, sho		
almost o per cent. in the que ported. The exports, on	the other	ore im-
have decreased by 6 per co	ent., as u	nder:

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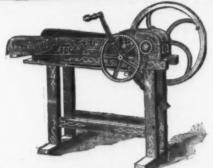
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#### METALLURGICAL NOTES.

MANGANESE AND THE PHYSICAL PROPERTIES OF STELL.

In previous issues of *The Iron Age* we printed the results obtained at Terrenoire in printed the results obtained at Terrenoire in a series of experiments made to determine the influence of varying amounts of phos-phorus and carbon upon the physical proper-ties of steel. The following tabulated rec-ords of mechanical tests show the facts elic-ited by experimenting in a similar manner with manganese. Besides traces of silicon and sulphur, the metal submitted to exami-nation contained:

		ntained	Mang.	Car.	Phos.
Casting	No	26	 0.521	0.450	0.067
44	No.	33	 1,060	0.467	0.072
14	No.	30	 1,305	0.515	0.061
46	No.	21	 3,008	0.560	0.058
					made to

show the quality of the metal, and at the same time to observe the effect of hardening same time to observe the effect of hardening in oil after being hammered and rolled. Bars 3.937 inches square and 3.937 feet long were submitted to bending tests in a hydraulic machine, the distance between supports being 3.2809 feet. The results obtained were the following:

Table 1.-Bending Tests No. of cast'g... 26 23 30 21 Perc't. mang'e. 0.521 1.060 1.305 2.008

Ordinary metal.	Deflect'n under load, inches.	Permanent de-	Deflect'n under load, inches.	Permanent de flec, inches.	Deflect'n under load, inches.	Permanent de- flec., inches.	Deflect'n under load, inches.	Permanent de- flec., inches.
Load, lbs.								
22,047								0.00
33,070								0.00
44,090								0.00
55,117								0.00
66,141							O. II	
88,188							0.15	
110,235	****	1.93		1.28	****	0.45		0.44
132,982		4-45		3.91	Ca	8.50		1.50
154,329				5.20		2.52		2.48
176,376 Fracture at	147.7	rislb	174,1	7:lb	187,3	4.13 99lb	200,6	3.98 28lb
-	-	·				-	-	-

racture at	04111	17241	1741	7110	107,3	19910	2004	12016
Metal hard- ened in oil.								
oad, lbs.						1		
12,047	0.05	0.00	0.04	0.00	0.03	0.00	0.02	0.0
13,070	0.08	O.OI	0.09	0.08	0.08	0.00	0.08	0.0
4,090	0.10	0.02	0.13	0.03	0.10	0.08	0.13	0.0
5,117	0.15	0.03	0.17	0.04	0.13	0.02	0.14	0.0

١	The follow	ing	tabl	0 2	ives	the	re	sults	of
I	Broke at	154.	329lb	147.7	121p	143,3	oslb	145.5	tolb
ı	132,282								
1	110,235	0.89	0.63	0.77	0.58	0.39	0.13	0.38	0.14
1	88,188	0.35	0.15	0.38	0.18	0.26	0.05	0.24	0.05
ł	66,141	0.24	0.05	0.22	0.07	0.16	0.03	0.17	0.02
1	55,117	0.15	0.03	0.17	0.04	0.13	0.02	0.14	0.01
ı	44,090	0.10	0.02	0.13	0.03	0.10	0.08	0.13	0.01
	33,070	0.08	0.01	0.09	0.08	0.08	0.00	0.08	0.00
١	22,047	0.05	0.00	0.04	0.00	0.03	0.00	0.02	0.00

drop tests made with the same material, the distance between supports being 3.2809 feet, and the weight dropped being 661.41 pounds. In this case also ordinary steel and metal hardened in oil were submitted to the test: Table 2 .- Drop Test.

	manganese	0.521	1.060	1.305	2.008
-Ord'y n	net.				
	feet	0.04	0.03	0,00	0,00
** 3.281		O. IR	0.08	0.05	0.04
4.92	**********	0.35	0.29	0.20	0.12
6.651	**********	0.03	0.51	0.37	0.27
44 8.200	1 46	1.03	U.79	0.57	0.55
16 9.843	1 46	1.43	0.82	0.81	broke
11 11.48		1.89	1.53	broke	
16 13.123		2.48	1.93	****	2.7 2.7
-Hard. in	oil -				
		0.04	0.04	0.00	0.00
1.080		0,30	0.10	0.08	0,04
44 4.921	46	0.43	0.35	0.27	0.16
6.569		0.67	0.50	0.47	0.84
8,200	14	1.06	0.90	0.71	0.47
44 g.843	08	1.45	1.57	1.02	0.63
44 11.483	44	8 93	1.65	1.38	broke
** 13.123	66	2144	2.09	1.77	***

The following table, No. 3, gives the results of tests made for tensile strength. It clearly, like the preceding ones, reveals the

ı	influence which man	iganes	e has i	apon st	teel:
ı	Table 3	-Tensi	ile Test	8.	
ı	No. of casting Per cent. manganese.		33 1.000	30 1.305	31
ı	Ordinary metDiame	ter, o.5	512 in. ]	Length,	3.94 in.
	Elastic limit, tons per square inch Tensile strength origi- inal section, tons per	19.41	85.39	30.94	34.64
	square inch Tensile strength re- duced section, tons	38.60	46.23	58.67	63 87
ľ	per square inch	67.99	79.65	95.30	78.66
ı	Elongation, per cent	24.2	21.0	25-7	9-5
ı	Diameter, 0.787 incl	ies. L	ength,	7.87 incl	hes.
	Elastic limit Ten. strength or. sect.	18.70 36.84 69.55	22.19 43-45 78.73	99.30 54.41 100.38	33.92 62.94 93.53
	Elong., per cent., mea- sured on 7.87 in Elong., per cent., mea-	94.5	21.4	17.4	10.5
ı	sured on 3.94 in	29.7	27.5	21.3	12.0
١	Metal hardened in oil Length			0.5512	inches.
	Elastic limit, tons Ten. strength, or. sect.	34.21 78.66 99-93	49.21 92.46 broke	Cut in	
١	Elong., per cent		)		
١	Diameter, 0.787 inch		ength, 7	.87 incl	les.
I	Elastic limit Ten. strength,or. sect.	29.66 54.41 91.74	broke		
1	Tou,	3	****	Cast in	Hard-

Fed. 91-74 ...
Elongation, measure on 3-94 inches..... 12.0 ...
Elongation, measure on 7.87 inches..... 16.0 ...

Table 4.—Tests of Compress Load, 70,550 pounds. Diameter of Test Piece, 0.3937 inch.

 
 No. of Casting.
 0.521
 1.050
 1.305

 Per cent. manganese
 0.521
 1.050
 1.305

 Ordinary Metal.
 0.396
 0.398
 0.400

 Hight before compression, inch.
 0.143
 0.150
 0.160

 Ratio.
 2.77
 8.05
 2.47

 Hardened in Oil.
 0.398
 0.396
 0.398

 Hight after compression.
 0.185
 0.187
 0.195

 Patio
 2.15
 2.12
 2.04
 All these tables, it will be noticed, agree

	Carbon.	Mang.	Phos.
Cast No. 66	0.490	0.200	0.070
** 25 26	0.450	0.531	0.067
The results of the as given by previous			metals
Plactic limit		No. 66.	No. 26

as 0.321 per cent, of manganese. Thus, by a series of tests such as those given, it is possible to arrive at actual figures which permit a direct comparison of the effect of the various elements upon the physical properties of steel. The Terrenoire Company have reached important results by following this laborious, but systematic and reliable course of experimenting. The matter, of course, becomes more complex when other elements such as silicon, sulphur and copper vary within wide limits also.

A NEW METHOD FOR MEASURING THE EFFECT OF OSCILLATING LOADS.

Prof. Spangenberg, the chief of the new testing bureau created by the Ministry of Commerce of Prussia, has been following out Herr Woehler's well-known and important experiment on the effect of oscillating loads, and has, according to Glaser's An-nalen, brought to bear upon the subject a new and interesting method of measuring their effect which may prove of much value. Starting from the idea that the result of oscillating strain would be to increase the conductivity for sound, he repeated Kunit's experiments. If, according to Herr Kundt, a rod of metal firmly held in the middle of its length is made to project with middle of its length is made to project with one end into an open glass tube, the inner surface of which is uniformly covered with silica powder, and the metal rod is vibrated longitudinally by drawing over it a piece of leather dipped into colophonium powder, the air in the tube will be caused to vibrate by the sound. Thus figures will be formed in the layer of silica which are of diamond shape, and the length of which can be easily measured. The longer they are the greater will be the conductivity of the rod for sound. Prof. Spangenberg determined the length of the sound figure for a specimen of Atlas steel and then submitted it to 1,000,000 oscillations. He repeated the measurement, Atlas steel and then submitted it to 1,000,000 oscillations. He repeated the measurement, and found that the length of the sound figure had increased. He continued the experiment, and found the first result confirmed until 8,000,000 of oscillations were reached. Then a certain limit was attained, after which two different sounds were heard simultaneously.

THE CONSUMPTION OF FUEL IN THE FOUNDRY

The Engineer, in a recent editorial on foundry cupola practice, calls attention to the great lack of uniformity in cupola management, and the widespread ignorance and indifference on the part of founders in reindifference on the part of founders in regard to the consumption of fuel. Much of Ireland's success in economical working of cupolas was less due to distribution of the blast and alterations in the interior shape of the furnace, than the quantity and pressure of the blast. One of the principal engineering firms of London discarded the old practice of retaining the melted metal in the furnace or furnaces until sufficient was obtained for making any large casting or castings. They adopted the method of tapping tained for making any large casting or castings. They adopted the method of tapping a furnace, capable of holding about 10 tons, as soon as about a ton is down, and keeping the metal in ladles until all required is down, and found that with furnaces of this size economical results may be obtained with two tayere holes at opposite sides, the furnace being nearly cylindrical internally, and the tuyere holes at about the 3-ton level. A blast pressure capable of supporting from 9 to 11 inches of water is employed. Most often it is but 9 inches. Economy, however, seems to depend upon quantity of blast more than upon its pressure. Four of the furnaces reupon its pressure. Four of the furnaces re-ferred to stand in a row, and although more than two are seldom used at one time, the main blast pipe feeding them is 22 inches in diameter, and the short branches therefrom about 9 inches in diameter. When the furnaces are at full work the fan devoted to them is capable of maintaining the pressures already named, and the ordinary consump-tion of coke is 1 1/4 hundredweight to the ton of iron melted.

SWEDISH EXPERIMENTS WITH WATER GAS. Some time ago Mr. George S. Dwight was invited by the Swedish Jernkontoret to invited by the Swedish Jernkontoret to conduct some experiments with the Strong water gas in Sweden, in order to determine its value for the generation of heat in metallurgical operations. The following figures of relative calorific values, which have been arrived at by Mr. Särnström, from the experiments referred to are very instructive and suggestive: 100.00 cubic feet of Siemens was free order evaluation apprife value 64 for and suggestive: 100.00 cubic feet of Siemens gas from coke equals in calorific value 64.60 cubic feet of Siemens gas from peat; or 59.80 cubic feet of Siemens gas from Höganäo coal; or 39.18 cubic feet of Str. ng water gas; or 17.75 cubic feet of coal gas (illuminating). THE FUTURE OF THE MANUFACTURE OF BES SEMER STEEL IN EUROPE.

A valuable essay on the probable effect of A valuable essay on the probable effect of the dephosphorization of pig in the Bessemer converter upon the future development of the steel industry of Europe, has been con-tributed by Herr W. Hupfeld, a well-known Austrian metallurgist, to the Zeitschrift d. berg u. hütt. Verein. f. Steierm. u. Kärnten. While his premises are oven to eviticism While his premises are open to criticism, and lack as yet sufficient support to be made the basis of elaborate predictions, his essay reveals a close study of the commercial status of the various steel-producing centers, their present sources of supply and their markets, which makes it well worth the attention of American steel-makers. Herr Hupfeld starts from the assumption that the possibility of making a good product from any raw material is now established, and that in the future right with religious religious. and the resistance to fracture are increased, while the ductility is improved. Like carbon, therefore, manganese is a hardener of steel. An interesting comparison of the effect of carbon and manganese upon the physical properties of the metal is afforded by the casts Nos. 66 and 26, which by an alysis were found to contain, besides traces of sulphur and silicon:

Carbon

Cast No. 66

Carbon

Car tricts. In the latter, hematite pig of lower Carbon. Mang.
Cast No. 66.

Cayo 0.200 0.200 0.201

The results of the tests of the two metals as given by previous tables is:

No. 66.

No. 66.

No. 66.

No. 66.

No. 66.

Tensile strength original section.

24.0

24.0

24.0

24.0

24.0

24.0

24.0

24.0

24.0

24.0

25.0

From these figures it will be seen that with metal of the class given, 0.040 per cent. of carbon has very nearly the same effect

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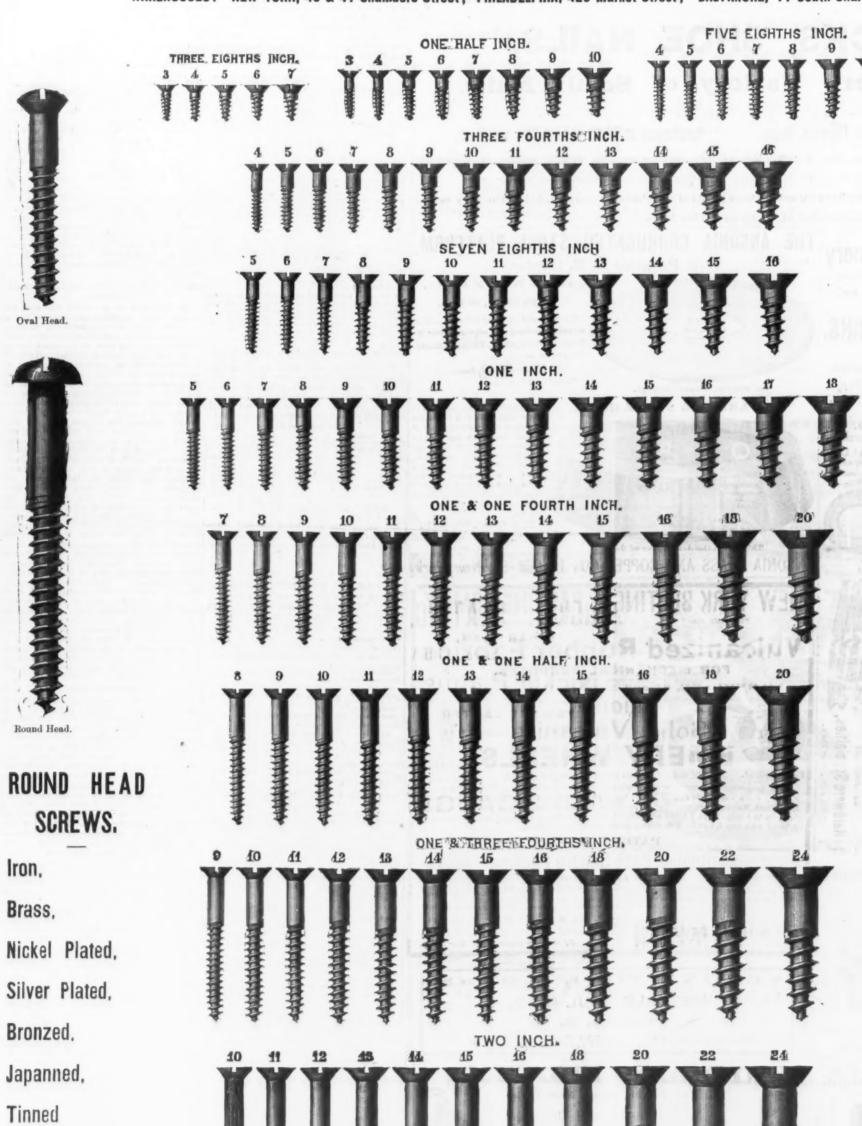
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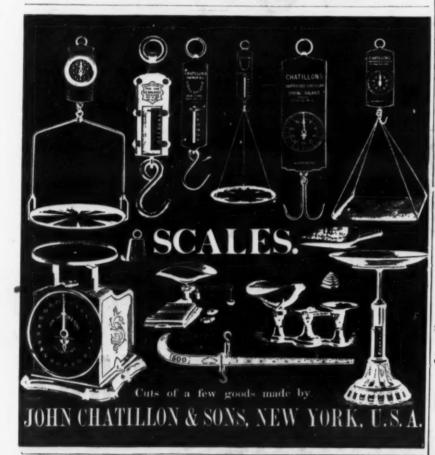
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leasily capable of turning out two millions of tons of pig iron, and formerly rolled from 300,000 to 400,000 tons of iron rails, there is every prospect of its being able to put on the market 1,000,000 tons or more of Bessemer steel rails. The works in the West of England will be forced to turn to other classes of manufacture, but will not escape a considerable contraction of output. Nor can Scotland, where gray pig capact he made.

A writer in Iron, in a historical sketch of Scotland, where gray pig cannot be made for less than 40/ (\$0.73) think of competing, because the cost of converting it into steel will be greater, owing to less favorable conditions, and because the freights to tidewater are considerably higher. Bolckow, Vaughan & Co. have succeeded, by working at Eston with a modern plant capable of enormous production, in taking a command-ing position in the international steel rail trade. Their chief competitors are Contrade. Their chief competitors are Continental works, Seraing and a number of Rhenish and Westphalian works—notably Krupp, Bochum, Hoerde, Osnabrueck, &c., while Austrian and French makers are virtually out of the race. Herr Hupfield believes that, owing to the advantages which the new process will give the English, the makers on the Continent will no longer be able to compete. It is true, he says that able to compete. It is true, he says, that there is one ore district on the Continent which can compare in size and cheap production with the Cleveland district. This is the well-known district containing enormous deposits of the ore known as "Minette," which are found in the French department of the Moselle, and extending through Lorraine and Luxemburg reach the Belgian frontier. This minette is now the basis of pig manufacture on a grand scale, the cost of production and completeness of plant being such that the district can easily combeing such that the district can easily compete with the North of England. White forge pig is now sold at 33 to 34 marks (\$7.85 to \$8.09), lower, therefore, than Middlesborough No. 4 forge iron, while gray pig is held at 37 to 40 marks (\$8.81 to \$9.52). As there is no reason to believe that this minette will not dephosphorize as well in the Bessemer converter as the Cleveland metal, Bessemer works built in the district would be able to turn out ingots as cheaply as their English competitors. It is at this point, however, that the equality ceases. The distance for which coal for rolling must be carried is much greater than that between carried is much greater than that between Durham and Middlesborough, and the freight to the nearest port would not amount to less than 5 to 6 shillings (\$1.22 to \$1.46) per ton, so that competition between rails made from so that competition between rails made from minette and from Cleveland ores in the open market is out of the question. Notwithstanding this fact, the minette district is of the greatest importance for the steel industry of Germany, Belgium and France. Belgian works, and notably Seraing, which commands excellent appliances, will use this cheap material and succeed in holding the Belgian market and possibly that of Holland. Belgian market and possibly that of Holland. In France there is every probability that Creusôt will make use of minette.

Creusot will make use of minette.

Herr Hupfeld then proceeds to review the situation in Germany. He divides the German works into two large classes: those having their mines and blast furnaces, and using therefore pig of their own make, and those working metal bought in the open market. The latter class, Herr Hupfeld claims, would have been forced to cease operations, if it had not been for the new dephosphorizing process. Such would have been the effect of the new German tariff, which by excluding English pig would have stopped one of their chief sources of supply. As export of rails is out of the question and the capacity of the works together is greater the capacity of the works together is greater than the wants of the home market call for, this effect of the tariff was considered benethan the wants of the nome market can for, this effect of the tariff was considered beneficial to the trade at large. Now, owing to the introduction of improved processes, the minette pig will enter the market in lieu of the English metal, and the blast-furnace men of the Sieg, Lahn, Ruhr and Rhine districts, who were looking forward to better times, will again be forced to face a strong competition. The importation of this low-grade pig will give the second class of steel works a new lease of life, because they are not encumbered by large blast furnace plants, expensive mining property and long-ore contracts. German Bessemer pig has been selling in the Rhenish provinces and Westphalia for 62 to 67 marks (\$14.76 to \$15.95) so that its cost of production was certainly not below 60 marks (\$14.28). German foundry pig Nos. 2 and 3 is worth 50 certainly not below 60 marks (\$14.28). German foundry pig Nos. 2 and 3 is worth 50 to 54 marks (\$11.90 to \$12.85), while gray minette pig can be had at 40 marks (\$0,52). This difference is large enough, notwithstanding increased waste and patent dues, to decide in favor of the latter.

The position of those steel works who manufacture pig for their own use is by ffir more serious. If they cannot compete with minette steel they must either import

with minette steel they must either import minette ore or stop producing their own pig. In the former case their iron mines become practically worthless; in the latter their furnaces are idle also. For and African ores.

A third possibility is that the Lorraine and Luxemburg blast-furnace plants will be com-pleted by the addition of steel works, so that the steel can be made on the spot. Herr Hupfeld believes that will be taken into con sideration very seriously, although the rapid succession of inventions, revolutionizing the entire trade, is not likely to inspire capitalists with such confidence as to lead them to embark in great and costly enterprises. In regard to Austria, Herr Hupfeld fears

As we have already stated, we believe smith.

least (\$2.43 to \$2.91) than in the hematite region of the West. Rails will be made at Middlesborough as low as 75/ to 80/ (\$18.25 phorization are not likely to prove as violent to \$19.46) per ton, and as the district is easily capable of turning out two millions of There can be no doubt, however, of the

A writer in Iron, in a historical sketch of the Bessemer process, as revealed by the English patent specifications, makes the following interesting comments upon recent ef-forts to produce good steel from poor pig, and points to a direction in which he believes experimenters ought to work. Analyses, he says, are continually published in order to says, are continually published in order to show that, by certain processes, the phosphorus of samples of Cleveland pig has been reduced from 1½ per cent. to say 0.1 per cent., and it is, therefore, inferred that the process, if applied to a pig containing less phosphorus, would bring down its quantity still lower, and thus produce good steel from ordinary pig iron. The fact is that it is easy enough, by a multitude of oxidizing devices, to greatly reduce the redundant phosphorus of Cleveland pig or the redundant sulphur of sulphurous pigs; the real practical difficulty only commences when the percentage of these elements is brought down percentage of these elements is brought down to about the quantity existing in good quality forge pigs—i. e., about ¼ per cent. It is then that the clinging of this residual minute proportion of the mischievous impurities becomes so obstinate as to defy the affinity of directly applied oxygen. The experimenters who seek to demonstrate the value of their processes by operating against phosphorus upon Cleveland pigs, begin at the wrong end. Instead of trying to reduce 1½ per cent. to 0.1 per cent., they should start at 0.1 per cent. (about the quantity contained in superior hematite pig), and try to reduce that to 0.05 per cent., or, better still, start at 0.05 per cent., and reduce that to 0.025. A reduction of 0.1 per cent. to 0.01 would be a blazing triumph. Even the able men who have been lately working non the Thomas-Gilchrist process seem to have lost sight of this. If they can start upon the best Bessemer pig iron, containing about 0.05 per cent. of phosphorus, and pro-duce from that a hard and tough tool steel, carrying 1½ per cent. carbon, and equal to that made approximately from "hoop L" Swedish iron by the old Sheffield processes of comentation and pot casting, they would demonstrate the value of their process far more effectively than by making mild rail steel from Cleveland, Northampton, or any other inferior pig.

A NEW DEPHOSPHORIZING PROCESS. A new claimant for the honors and profits awaiting the successful metallurgist capable of setting the dephosphorization question at rest, has appeared, introduced by Mr R. F. Mushet. The latter has written a letter to the London Iron Trade Exchange, from which we take the following, which gives the mode of working and the results obtained on an experimental scale by Mr. Edwin Pet-tit, of Cheltenham, the inventor of the pro-Some Northampton pig iron, contain ing by analysis-

was melted and blown. During the blow, and toward the close of it, 3 per cent. of the weight of the cast iron operated upon, in pulverized hammer scale, was introduced through the blast pipe—blown, in fact, into the melted iron. The blow lasted eight minthrough the blast pipe—blown, in fact, into the melted iron. The blow lasted eight minutes, and the metal was then teemed into an ingot mold. This ingot was drawn out into a bar about 1½ inches square, and proved to be steel of a quality perfectly suited for rails. Its properties were those of iron; it stood as much heat in the smith's fire as the best Staffordshire iron, welding equally well in the most perfect manner. In fact, it was malleable iron, produced direct from phosphoric pig iron, without the aid of lime, magnesia, spiegel or ferromanganese in any form whatever. Its analysis is as under:

JAPANESE METALLURGICAL OPERATIONS. Referring to the letter printed recently on primitive mothods of copper smelting in Japan, it may be of interest to many of our readers, as a further illustration of the way in which the Japanese have foreshadowed present improved metallurgical processes, to reproduce the following from "Percy's reproduce the following from "Percy's Metallurgy of Iron and Steel," quoted by the Mining Journal: Mr. Clibborn communicated to the Royal Irish Academy on May 26, 1862, an interesting paper, in which he endeavors to prove that the Japanese foreendeavors to prove that the Japanese fore-stalled Bessemer 300 years ago. In the English version of "Mandelslo's Travels," published in London in 1669, it is stated (page 160) that "they (the Japanese) have, among others, a particular invention for the melting of iron without the using of fire, casting it into a tun done about on the inside with about half a foot of earth, where they making 100 lbs. of pig, 275 to 300 lbs. of minette will be required; while, on the other hand, 100 lbs. of minette pig will retake it out by ladlesful to give it what form they please much better and more artificially. other hand, 100 lbs. of minette pig will require, for remelting, 133 lbs. of coke to be carried from the Ruhr district. In the one case 2½ to 3 parts of ore must be carried, and in the other, I part of pig and 1½ parts of coke, or, in all, 2½ parts. As ore is generally carried cheaper than pig and coal, it will probably be best for the works in the Westphalia coal regions to import ores from Lorreine and Luvemburg instead of Spanish; part of best pig iron, for if it had been the irruption so Westphalia coal regions to import ores from pig iron, for if it had been the irruption so characteristic of the Bessemer process would at third possibility is that the Lorraine and speedily have occurred, and would certainly have attracted the attention of the traveler, who, however, makes not the slightest allusion to it. The second is, that supposing the molten pig iron to have become decarburized, it could not have been cast into sound articles in the manner described.

An electric target—that is, a target which by means of electricity shows, instantane-Spring Wire.

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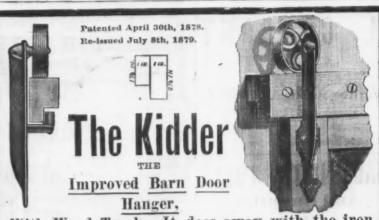
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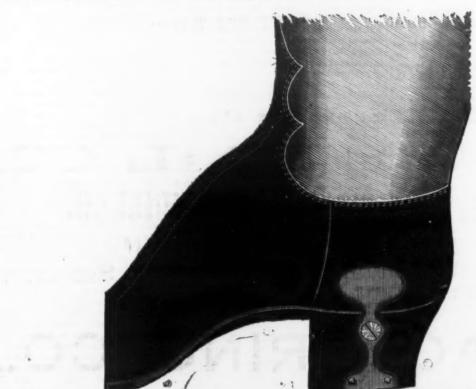
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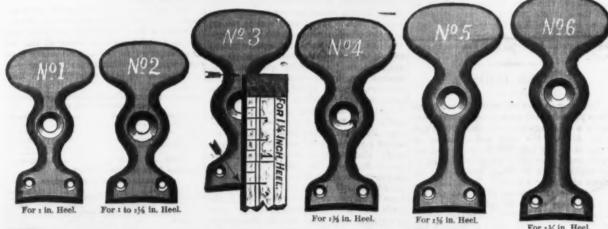
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MINING AND MINERAL ITEMS.

The shipments of ore from the new bed at Fort Ann, New York, are already quite large, some 500 to 600 tons being shipped each week. It is said that the ore is of a very superior quality.

We condense from the Marquette (Mich.) Mining Journal as follows: The New York, notwithstanding the great fall of rock, is doing remarkably well in the way of shipments—39,163 tons up to the 20th, as compared with only 13,879 tons during the same period last year. The old Lake Superior Mine is again asserting her prominence. Her lake shipments up to August 20 footed up 91,080 gross tons, against a total of 65,060 tons for a corresponding period last year—a gain of 25,120 tons. The Cleveland Mine had shipped by lake up to August 16,65,594 tons, a very considerable falling off from last year, occasioned by the accident which closed for the season one of her most prolific pits. Probably no mine on the range has deep the deep sea well in the wetter of productions. ments—39, 163 tons up to the 20th, as compared with only 13,879 tons during the same period last year. The old Lake Superior Mine is again asserting her prominence. Her lake shipments up to August 20 footed up 91,080 gross tons, against a total of 65,-96 tons for a corresponding period last year—a gain of 25,120 tons. The Cleveland Mine had shipped by lake up to August 16, 65,594 tons, a very considerable falling off from last year, occasioned by the accident which closed for the season one of her most prolific pits. Probably no mine on the range has done so well in the matter of production this season as has the No. 3 pit of the Vulcan since the commencement of operations the past spring. The first ore was mined and taken from this pit about the 1st of July, and now from 300 to 400 tons per day of 24 hours are taken out of the same place from three openings, into two of which the incline runs direct, the ore in the other being hauled by carts and dumped into pockets, thence into the incline cars. About 40 men are employed in the pit, mining and stripping. On Saturday, August 16, 220 tons were taken out in eight hours by a force of about 20 men, being the largest day's work yet done. The total lake shipments of Republic ore up to and including the 20th ult., are given at 93,014 gross tons, as compared with 130,418 tons for a correments of Republic ore up to and including the 20th ult., are given at 93,014 gross tons, as compared with 130,418 tons for a corresponding period of last year—a falling off of 37,404 tons. The stock piles have all been nearly, if not quite, cleaned up, and shipments during the remainder of the season will merely represent the daily average amount of ore raised from the different pits.

In the manufacturers, being compelled to make engagements both for supplies and sales one or two months in advance, have not yet received any substantial advantage, and will not before October 1. The Briar Hill Company have compromised with their men. The strikers demanded 15 per cent advance, and the company have agreed to give them 10.

The striking molders at Reading, Pa.

ments during the remainder of the season will merely represent the daily average amount of ore raised from the different pits. In the meantime, however, the mine is being put in shape for a resumption of her old-time figures.

The new discovery of iron ore in the Menominee region, of which we spoke lately, promises to add very materially to the shipments from that region. According to the Ranger a shaft had been sunk a depth of about 18 feet, and ore of a very fine quality found, from which 60 tons had been mined during the first week. The deposit at this point is about 30 feet wide. About 200 feet north of this shaft three other openings have been made, within a distance of 55 feet, all of which show a good shipping ore, and which leads to the conclusion that the deposit at this point is fully as wide as the distance across the three pits—55 feet—if not wider. The deposit is again struck 300 feet wost of the upper openings, the ore being of exactly the same quality, then again 20 feet to the north, then 20 feet to the west again, and, altogether, in about a dozen places on the property. Old miners assert that the ore is as good as any found on the range, while the quantity appears to be unlimited.

The striking molders at Reading, Pa., show the following balance sheet for a week: Receipts, \$530.46, including a bill of \$192.78 for groceries. Additional receipts were reported at the meeting, leaving a balance in the treasury of \$137.31.

The report that certain mills in Schuylkill County, Pa., have been unable to resume operations by reason of a scarcity of skilled labor, is without the least foundation. There has been no difficulty in getting all the skilled workmen needed by the mills in that section.

The South Side, Pittsburgh, glass pressers' strike is about over, and most of the flint glass works resumed operations on Monday. The propositions, which, after some discussion, were accepted by the men. Some 360 glass blowers are affected by the stellement. The gatherers, instead of being paid by the turn, will

months.

A party of Swedes, 30 in number, have arrived at Vulcan, Lake Superior, direct from Sweden. They are now doing service at the various mines thereabouts.

They are now doing service at the various mines thereabouts.

The bistory of a late strike in West Stock bridge, Mass., is edifying. The workmen in the employ of the They are now doing service at the various mines thereabouts.

burgh, yields 47 per cent. of ircn.
J. F. Stevens is reported to be opening up

mainder of the season.

COPPER.

A copper belt, some two miles long and from 200 to 400 feet wide, has been discovered about the middle of the southern part of Maine, directly on the coast. Some 20 miles to the northward of this copper belt, silver has been found in flakes, masses and filaments. A shaft has been sunk some hundred feet deep, and it is reported that the ore increases in richness with the depth.

PRECIOUS METALS.

with good success.

The Pioneer says: July was a good month The Foncer says: July was a good month for the Black Hill mines. The mills ran almost without interruption through the en-tire month. We are able, however, to ob-tain but a few of the results. The Homestake and De Smet companies together cleaned up over \$125,000; Golden Terra, \$40,250, and the Deadwood, with 60 stamps, ers a net profit of over \$30,000 per month.
To the above clean-ups may be added the Highland, of over \$10,000. The Great Eastern will clean up on the 3d, and will average about the same as last month, \$8000, and the Caledonia a little over \$7000. In addition to the foregoing, there were In addition to the foregoing, there were over 100 stamps crushing steadily, and as the average throughout the camp is about Hartford are the same, we will not be amiss to aggregate nine and a half for a day's work. For this result at \$150,000. Add to this \$25,000 from various placer districts, and the total yield of gold for the month will foot up over the first glass manufacturers and blowers the tritts which having sattled there different the same of the same o \$420,000.
The bonansas which have been developed

The bonanas which have been developed in the Black Hills up to the present time lie in a bette extending through hills and gulches for a distance of about two miles. The belt is a vein which is about restricted in width, but varies very much. A large amount of capital is invested in working the mines located in this seam of ore.

A circular, issued by 13 of the largest German manufacturers of pig iron, announces an advance of 13 per cent. In the price of pig, while the pipe and tube manufacturers have united to increase the price of those materials by 13 per cent. located in this seam of ore.

#### LABOR AND WAGES.

COAL.

Prof. Hayden and others estimate that from 50,000 to 65,000 square miles of Montana's area are underlaid with coal. Several of the measures are yielding an excellent quality of fuel.

Immense beds or veins of the finest bituminous coal have been discovered 145 miles west of San Antonio, Texas, near the Rio Grande.

IRON.

The shipments of ore from the new bed at Fort Ann. New York, are already quite resumed work. The report that they made the men stopped work. The years would be the same as other mills, and they resumed work. The report that the men resumed work. The report that the men were paid only \$2.40 for 15 or 16 hours' work is untrue.

Miners are striking in Blair and Clear-field Counties, Pa.

The heaters at Palo Alto, Pa., having in-timated that a raise of 10 per cent. would be as acceptable to them as it was to the Fishbach strikers, they were raised accordingly. At both places their wages at present are

the manufacturers, being compelled to make engagements both for supplies and sales one

bargh, yields 47 per cent. of ircn.
J. F. Stevens is reported to be opening up a large deposit of hematite at the old Spurr & Calhoun mine, on the Negaunee south range, Mich. The Northwestern Company is supplying the mine with a side track, and it is the intention to ship several cargoes of the intention to ship several cargoes of the season.

Stevens claims that he will be able to mine from 100 to 150 tons daily during the remainder of the season.

The employ of the Hudson Iron Company were getting \$1 per diem. Some of them struck for \$1.25 and forced others who had no stomach for striking to do the same. The Hudson Company, as its furnaces needed repairs, were quite willing to close its mines. Last Friday there was a conference of employers and employed, and the rate of wages was settled at \$1.12½. There have been 10 days of idleness, voluntary or enforced. The mainder of the season.

PRECIOUS METALS.

A new mining company has been organized in Portland, Me., under the name of the Company own a large tract of land on the shore of Deer Isle, where they are operating with read success.

Trom numerous sections of East Pennsylvania come reports of advances in the wages of the workers in the iron mills. The puddlers and helpers at the Susqueshore of Deer Isle, where they are operating granted an increase of 55 cents per ton, all other employees to per cent.

The window glass cutters at Pittsburgh.

The window glass cutters at Pittsburgh emanded an increase in wages. The cutters had been receiving 221/2 cents per box of 100 feet, for single strength, and 30 cents per box for double strength, and they demanded that the men employed as "assorters" be dis-charged, and that they receive 25 cents per box for single strength and 45 cents per box for double strength glass. The manufacturers refused to accede to the demand, cleaned up \$43,000, with an expense of less facturers refused to accede to the demand, than \$10,000. This mine makes for its owners a net profit of over \$30,000 per month.

make from \$3 to \$3.50 per day for 9 months

The hours of labor at Colt's Armory at Hartford are to be increased from eight to nine and a half for a day's work. For

at Pittsburgh, having settled there differ-ences, are now quarreling as to who gave in.

# The Iron Age

Metallurgical Review.

New York, Thursday, September 4, 1879. - Publisher and Proprietor DAVID WILLIAMS

· Editor. JAMES C. FAYLES . JOHN S. KING . . . Business Manager.

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Thirty ninth Page.—Boston and St. Louis Hardware and Metal Prices.

Some of the features of the present advance in iron are worthy of note. It will be found, upon inquiry, that in the case of business has not come from gaining new prime condition of success in the business. customers, but from increase in the or- Our advertising columns constantly reflect ders of the old. There may be some excepthis progress, and no one who studies tions to this statement, but it will hold true them can fail to be impressed with the generally. This indicates that there has number and variety of important improvebeen a decided increase in consumptive de- ments announced from season to season. mand, and that both consumers and jobbers The ax makers have felt, in a conspic believe that this is a good time to stock up uous degree, the importance of a constant and to place orders for future consumption. Another feature of interest is that the in- thing pertaining to the ax has been sciencrease has come without much drumming tifically studied, and for every change made for trade: that is, the buyers have sought however slight, the makers have had an in-

ate delivery. We have mentioned a case needed in ten days.

#### Beauty in Manufactures.

At the opening of a fine art exhibition in Chester, England, Mr. Gladstone delivered an address on the subject of industrial art,

from which we quote the following: I have been speaking of Americans, with whom I trust we shall always continue in peace and it onds of brotherhood (applause); and if you take the industrial productions of America, I am sorry o say we find that very few have any beauty at ill. (Applause.) The circumstances of their na-onal existence down to the present time have, rom the scarcity of labor and other causes, compelled them to do a thing in the shortest way and most effectual way for answering the immediate purpose, and the beauty of production has been entirely overlooked. (Hear, hear). I may filustrate this by reference to a pursuit to which I have myself personal relation—the cutting of wood. (Laughter). The American ax is an ax wood, (Laughter). The American ax is an ax not intended to cut a tree away neatly, but to cut a tree away quickly. The American does not care a pin about beauty of work; his object is to clear ground. To a certain extent the same consideration will apply here.

In talking in this way of American manufactures, we suspect that Mr. Gladstone was tempted to please his audience, and engreeted, to stretch the point a little. Taking the single illustration of the ax: If Mr. Bladstone discovers in the English ax a can, he sees what all the rest of the world are unable to discover. We think he even sutting is that which cuts most rapidly with the least expenditure of labor. The neatless with which the tree is cut down-by which is meant, we suppose, the appearance of the stump-depends upon the skill with which the woodman wields the ax. Now, if it be true, as Mr. Gladstone asserts, that the American ax cuts a tree away quickly (and his previous praise of it as a practical implement warrants this inference from his remarks) what else he says on the subject is open to the objection of being nonsense. In such an article as the ax, the highest beauty is secured when the greatest utility is attained. The woodman does not buy an ax for an ornament. He wants one which shall levelop the least resistance in forcing its way through the wood. It must be so shaped as to give a thin cutting edge, with still too ready to accept ornament of any such lines as will throw a chip with each kind as satisfactory decoration. But Mr. stroke without the annoyance of wedging fast. The head must be properly balanced; it must be as light as is consistent with the using as illustrations of graceless and ugly greatest utility, but not too light. The handle must be so shaped as to give the user a good hold, and enable him to deliver a blow just where he wants it, without straining or unduly wearying any of the muscles of his arms. These qualities constitute the perfection of utility in the ax. They also impart to it all the beauty it is capable of receiving. The American ax of the better class has all these qualities, and to this extent it is a work of art. The keen, taper edge, polished like a mirror; the blued or bronzed head, perfectly finished; the long, ight handle, almost elastic, in which every curve is a line of beauty; its perfect balance and its evident utility, which make a man who handles it feel as if with it he could hew his way through one of the Sequoia groves of the Calaveras district, or lay low he Cedars of Lebanon-are qualities which have made the American ax famous the world over. Not a single feature of ornament could be added that would not be superfluous and inappropriate. In its simple excellence the American ax attains the highest standard of beauty possible in an ax.

so much of a hurry that they have had no time to consider anything but how to make axes which should cut fast, and that the conditions of our national development have caused us to disregard beauty. actly the reverse of this is true. The scarcity and high price of skilled labor, combined with the intelligence of our native mechanics, has been a constant stimulus to the manufacturers of tools of all kinds. A good workman will not work with anything but the best implements-he cannot afford to. In countries where labor is cheap and abundant, tools do not improve. In this country they have improved so rapidly that constant progress toward better shapes and most mills the increase in the volume of higher standards of excellence has been the demand for something better. Every-

he intelligent critic would miss.

sumers. The true secret of many of the ad- the attention they call for in an article in- few days since in Youngstown. They have vances that have taken place during the tended for purposes which, in half a minute been distributed not only in Pittsburgh, but past six weeks, will be found in the offers of practical use, would be robbed of every in every city and town in this country where that buyers have made for iron for immedi-quality except those which contribute to members of the association are employed, utility. In such an article as an ax beauty and this was to prevent the persons whose where 2.20¢ was offered when 2¢ was the is necessarily an inherent quality, and in names were given from securing employusual selling price, for a lot of iron that was this respect we claim for American axes the ment. highest attainable standard of beauty.

That Mr. Gladstone's opinions-or at least the foregoing extract from his Chester Association's "black list ?" If the former is speech, his high praise of American axes in an "institution of oppression," is not the ances at Nottingham he astonished his friends tree 66 inches in the girth in 50 minutes. do the same? The only difference is that the We do not remember whether anything was manufacturers aim their list against those said about the "neatness" of Mr. Gladstone's not of their own class, while the workmen work on that occasion, but he made the chips oppress workmen. Is it not a fair proposifly, and we are told there was quite a be saved as mementoes of the occasion. We alone? presume they were neat enough to be preserved as souvenirs. At that time Mr. Gladstone is said to have greatly commended the "pretty little tool" with which he did the work. But then, as we said before, it depends very much upon one's audience what

ne inclines to say.

There are many departments of industry in which our manufacturers have too generally neglected a due regard for beauty. This is not true of those trades which make couraged by the "hear-hears." and the tools in which excellence and convenience applause "with which his statements were are the only qualities that can remain after use. Had Mr. Gladstone said that industrial art had not yet received the study which it merits in the United States, that in beauty which does not exist in the Ameri- art excellence many American products are inferior to those of Great Britain, and that we began in 1876, with the Centennial, what contradicts himself. The perfect ax for tree Great Britain began in 1851, with the first world's fair in London, he would have told us wholesome truths that might well have been seriously considered by our manufacthe first half year \$114,200,190; in France, turers. We certainly have neglected this department of art, and the result of the sudden national awkening in 1876 has been to ornament, without a due regard for the laws importations is principally in food products, of art and the principle of fitness. We need more originality in design, which means more designers; we need to study more closely the law of relationship between form, texture, color and use. We need to learn why we should avoid such mistakes as employing a design appropriate for repousse work in silver, for an oven door ornament in cast iron, for example. We are not doing enough to educate designers, and are Gladstone, should he assume to advise us on these points, would do well to avoid using as illustrations of graceless and ugly and fitness as American axes and mechanics

#### Black Listing.

The inconsistencies of would-be reformer have pointed many an argument and turned many a laugh against both themselves and We have had occasion, their cause. more than one instance, to point out the utter inconsistencies of those who claim to be working, and no doubt honestly, in the cause of "labor reform." While claiming to labor in the interest of justice for humanity, they act as though humanity was bounded by their own class, and that everybody else was outside, and consequently had no rights. Some of the strongest arguments again st themselves are those out of their own mouths. A most flagrant violation of their own tenets has lately occurred in Pittsburgh. If there is one thing more than another that they have condemned without stint it is "black listing" on the part of the manufacturers-that is, the practice, for-If made of good steel, it lacks nothing which tunately rare in this country, of one manufacturer or operator giving notice to others Mr. Gladstone is mistaken in supposing of the discharge of an objectionable workthat American manufacturers have been in man, to prevent his obtaining work. A late number of the Labor Tribune contains an extract of a speech delivered in St. Louis by Jonathan C. Fincher, whom it terms "that old war horse of labor," in which he says: The black list was another institution of oppression. When a miner quitted work at one mine the fact would be telegraphed to all offices throughout the coal district, with a description of the man, and every avenue of employment would be closed

against him and his family." The same week that this appeared, circulars were distributed broadcast in Pittsburgh to the following import: "To whom it may concern. - During the winter of 1878-9, the men employed at the Solar Hoop Mill, Fifteenth ward, Pittsburgh, believed themselves unfairly dealt with by the employers; they made several efforts to persuade the company to relieve them of obnoxious ing the facilities for such work. Finding \$40,281,395 to \$36,445,395. no other means of redress the men resorted to a strike, which lasted 13 weeks. Du ing the existence of this trouble, the for

lowing persons worked in the mill." Fifty-five names follow this. After each name is printed the part each one performe the sellers—a most healthy indication. It telligent reason. The ends sought would not in the mill. There is no signature given, an will be further found that, so far as price is have been attained by etching the head or the name of the firm which did the printing concerned, the sellers are more conservative inlaying the handle. After making the best is suppressed. One of the workmen whose than the buyers. This is a somewhat para- ax he could, the taste of the manufacturer name helps to make up the list, states that doxical statement, but manufacturers are has had some chance to exercise itself in these papers were the work of the Amalga holding back, and are more fearful of the neat labeling and convenient packing for mated Iron Association, and the result of an effect of a too rapid advance than the con- market, and these matters have received all action taken at their session which closed a consists of breadstuffs, &c.

Without expressing any opinion as to the alleged facts, we ask: What is the diftheir expression—are influenced by his ference in principle between the manufacaudience, is evident when we compare with turers' "black list" and the Amalgamated 1875, when, in his wood chopping perform- latter? If the manufacturers use their "black list" to prevent men from securing with the "pretty little tool" by felling a employment, do not the workmen propose to tion that, if the workmen expect justice, they scramble for them among the on lookers, to must ask it for all and not for themselves

#### English and French Trade in 1879.

We have received the official returns of English and French trade for the first six figures: months of the current year, as compared with the corresponding period of 1878, statistics of great interest at this time, since the United States will do a larger business with these countries in 1879 than they have done

at any previous time.

ENGLAND'S FOREIGN TRADE. First six months of 7879 Merchandise only #948,239,270 473,302,000 1879. \$863,2:8,615 444,132,465 ...\$1,421,541,270 \$1,307,341,080 Total. FRANCE'S FOREIGN TRADE \$466,493,600 \$389,394,600

\$692,173,200 Total ..... \$773,592,400 It will be seen from these figures that the total trade of England has decreased during on the contrary, there has been an increase of \$81.419,200. In England both import and export have decreased; in France both lead many manufacturers into excesses of have increased. The decrease in English as will appear from the following compar-

isons:		
	1878.	1879.
Wheat		\$55,147,595
Barley	13,100,350	7,376,050
Indian corn	32,592,505	25,644 240
Flour	20,089,440	19,085,570
Potatoes		4,583,545
Tea	13,760,355	12,066,910
Wines		14,049,845
Cattle	14,730,000	13,780,000
Bacon	18,872,130	18,191,890
Cheese	8,488,945	6,966,835
Eggs	6,888,480	6,597,265
Total	228.844.100	\$182.480.745

The quantity of breadstuffs imported into

Great Britain since last year's crop, from Sept. 1, 1878 to July 1, 1879, was 39,786,303 quarters wheat, against 46,866,873 in 1877-78; 7,521,264 quarters flour, against 7,246,-625; 9,143,106 quarters barley, against 11,-754,476, and 29,510,970 quarters corn, against 29,367,375—together 85,961,643 quarters, against 95,235,349 quarters the previous year. Of cotton England imported 7,532,165 cwts., against 7,905,679 last year, and in value \$00,070,140, against \$111,636,-545. From the United States, England re ceived 5,951,657 cwts., against 6,451,249 in 1878. Flax declined from \$9,899,770 last year to \$7,709,905 this year, and hemp from \$5,049,705 to \$3,441,655. Hides decrease from \$4,444,088 to \$1,692,530 and leather from \$8,194,995 to \$5,685,690. Oleaginous seeds also show a decrease, having been \$11,272,110 last year, and \$6,469,250 this year. Raw silk fell from \$9,510,150 to \$7, 141,205; timber from \$8,499,625 to \$5,243, 370, and lumber from \$13,975,490 to \$7,300,-Wool, on the contrary, has increased 455and from Australia alone 250,856,330 pounds have arrived during the first six months of 1879, and of all sorts 298,979,678, against 271,457,790 during the same time in 1878, being in value \$87,283,940, against \$79,335, Raw sugar has risen from 8.33 10,422,433 cwts., and from \$45,643,050 to \$52,514,800, and refined from \$7,766,840 to \$8,613,165. The importation of manufactures has been light, except silk goods, which from \$19,533,900 have increased to \$20,-925,080, the bulk being as usual from Re-export statistics show a notable in-

crease in cotton, which from \$8,563,880 rose to \$10,455,225, and in wool, which from \$29,-234,445 increased to \$40,527,325. British exports of domestic goods show a

decrease in most items, owing to the fall in prices. Although the coal exports increased in quantity from 6,353,000 tons to 7,505,000 tons, it has fallen in value from \$17,675,180 to \$16,710,230. Twist declined from \$32,-031,240 to \$28,433,545, and cotton goods from \$130,331,755 to \$120,501,445. and steel and manufactures decreased from \$46,754,925 to \$42,658,885; linen from \$14,910,000 to \$13,840,000. Linen yarn increased in weight from 14,295,000 pounds to rales, &c. The firm were unrelenting, and demanded superior work without furnish-

IMPORTS IN	TO FRANCE.	
Food	218,306,600 42,466,800	1878. \$108,300,200 317,606,600 44,097,800 19,396,000
Total EXPORTS FR		\$389,400,600
Manufactures Raw material and food Other goods	123,892,400	\$162,240,\$00 124,002,200 16,536,000
Total The increased impor		\$302,778,600 ood chiefly

34,014 5,560 Total ....

Showing an increase of 30 per cent. The import of wine has increased from 16,405,608 gallons to 26,904,942, and alcohol from 859,512 to 1,117,335. This is entirely due to the vine disease in most of the winemaking districts of France. Spanish wine and alcohol are imported to make up the deficiency, and the importation of American alcohol into France is becoming quite extensive. France also imports more raw material; thus of wool there have been imported 81,000 tons, against 74,000 last year : the same may be said of hides and furs, coal, manures, nitrate and dye woods. A decrease is noticeable in raw silk, cotton, lumber, oleaginous seeds, flax, copper and indigo, as will appear from the following

	1878. tons,	1879. tons.
Cotton	110,090	93,000
Flax	37,000	28,000
Silk	31/2	3

Of manufactures there has been an increased importation of woolens, which, from \$6,521,000, have risen to 6,952,400; of silks, which have increased from \$3,000,-000 to \$3,400,000, and of leather, which has this year been \$3,355,400, against \$2,000,000 last year. The import of cotton goods has. on the other hand, fallen from \$7,200,000 to \$6,400,000, and twist from \$4,200,000 to \$3,200,000.

The export from France has increased in cotton goods from \$5,000,000 to \$6,114,600 and a notable increase has also occurred in the export of prepared skins, fancy goods and millinery, hardware, metal worsted, chemicals, furniture and machinery. The exportation of woolens has decreased from \$28,200,000 to \$27,800,000, and that of silks from \$26,400,000 to \$24,600,000, and there has, besides, been a decline in linen goods, jewelry, refined sugar and straw goods. In other words, France has exported more manufactures and imported less.

Since July I crop prospects have been improving somewhat in France, at least further to the south, while in England, on the contrary, they have become a great deal worse. If, therefore, France takes less breadstuffs from us during the latter half of the year, England is likely to take all the greater quantity, and the result will to us be about the same.

Two poor crops in succession have imparted an extraordinary impulse to the importation of food from this country into both England and France, so much so that we have exported to the latter country more American produce during the calendar year 1878 than to any other country except England.

AMERICAN EXPORTATION OF DOMESTIC GOODS DURING THE CALENDAR YEAR 1878. To American countries...... \$38,661,000

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	Asia. Africa. Australasia.	13,228,000 4,346,000 9,085,000
t	Total	\$729,077,000
3	Against \$632,981,000 in 1877.	
1	TO FRANCE AND HER POSSESSION	IN.
	To France.	\$78,812,000
,	French West Indies and Guyana St. Pierre, Miguelon	1,549,000
1	French India and Cochin China	347,000
8	Algeria	365,000
٠	Total	\$81,181,000

In spite of the many causes for depression still existing in both France and England, late commercial advices inform us that business is looking up in those countries, principally, it would seem, from diminished stocks in second and consumers' hands, and many articles are rising, assisted in many instances by speculation, which is stimulated hy an extremely easy money market latter, we are told from England, is not likely to remain as easy as now, in view of the gold drain to the United States, which has begun and will increase as the bills drawn against food from here become due a couple of months hence. It is true England ends us more goods than last year, and a good many bonds and stocks are returned this way while they remain high here : but the outflow of gold in unusually large amounts is nevertheless inevitable. the prediction that after a while the discount in the great money centers of Europe will rise, is of little importance to us on this side, a tight money market being impossible in the United States so long as we have such an extraordinary surplus in our favor in our foreign dealings.

The English trade papers are complaining that the British markets are crowded with cheap German imitations of English goods. so labeled and packed that consumers cannot distinguish them from the articles they are intended to imitate. Sheffield names and marks seem to be most largely counterfeited, and manufacturers complain that these fraudulent goods are largely sold in their own market to consumers who suppose they are buying well-known Sheffield makes. whose reputation suffers thereby on account of the very inferior quality of the German goods. A merchant writing to a London paper on this subject, says: "Many of the old staple trades of the town are now suffering from this miscalled foreign competitionin plain terms, foreign forgery-and it is 'felt on all hands that the introduction of

"foreign cutlery into England, for the pur-'pose of having it resold as of home manu-"the highest degree, and calls for a sharp "remedy." No doubt this is very uncom-

#### Railroads Fifty Years Ago.

There has been some talk abroad, both in England and on the Continent, about commemorating the opening to traffic of the first railway, half a century ago. The idea is certainly one well deserving of favorable consideration, chiefly because the present generation is apt, in accepting the existence and influence of railways on modern civilization, to forget the struggle which their introduction cost and the sacrifices of those whose genius, energy and enterprise overcame the obstacles to their introduction. But the effort to single out one date which might be looked upon as the birthday of railroads, is liable to end in failure. Like all great revolutions in engineering, the railroads did appears, however, that those who are now endeavoring to organize a movement for paying tribute to the men who were instrumental in introducing railway transportation have deemed the 15th of October, 1829, a date sufficiently marked in the history of early progress to make it the one pre-eminently deserving of the title, "the birthday of the railway." No doubt this date has certain claims to distinction; but, on the other hand, earlier successful attempts should not be forgotten. By giving it undue prominence false impressions might be created, and, therefore, a short historical sketch, for the facts of which we are largely indebted to Thurston's "Growth of the Steam Engine," showing how gradual was the development, may be of interest at this time.

In the beginning of the present century the use of steam power had, by the efforts of Watt, Boulton and others, gained extensive application in many branches of industry, and the steam engine had been fully developed in its essential features. As early as 1770 Cugnot, a French officer, had, with the aid of powerful patrons, built a steam carriage which was practically successful. Later both Read and Murdoch constructed models which were not, however, copied on a Newport, Delaware, planned an engine for sign, which was capable of mounting heavy a steam carriage, after having applied to grades and turning short curves, a performthe Penusylvania Legislature for a patent as ance which was, by English engineers, conearly as 1786. He built, in 1804, a curious machine, which he called "Oruktor Amfor dredging the Delaware at phibolis. Philadelphia. It was a flat bottomed dredging machine, mounted on wheels, and was propelled on land and water by a steam en-Somewhat earlier, in 1803, Richard Trevithick, a Cornishman, built a road engine which was quite successful. These early attempts, it will be noticed, were all aimed at supplanting horses by machinery in conveying carriages over common roads Inventors continued to seek a solution of the problem of land transportation in this direction. Julius Griffiths, in 1821; Gordon and Gurney, and Burstall and Hill, in 1822; James, in 1824-5; Brown, in 1826, and a number of others designed and built engines, some of which were partially successful. efforts were continued for many years afterward, the most successful engineer, Walter Hancock, building road engines till 1836.

The first engineer to apply steam power to the haulage of loads on a permanent way, and thus to combine the two well known principles, was Richard Trevithick, whose locomotive" engine was put to work on a Welsh colliery road in 1804. Four years later he built a railroad in London. The nd engineer who built engines to work on a permanent way was William Hedley, whose machine in 1813 hauled coal trains at the Wylam collieries, and continued to do so for many years. At this stage of the development of the railway, a name first appears which will forever be associated with the early development of railways, that of George Stephenson, who first made the locomotive engine a success. In 1814 he completed an engine for hauling coal in the Killingworth pit. His first engine. which did not prove economical, was in the following year superseded by a second one of somewhat different design, followed by a number of others in the years 1816 and 1817. In 1822 he put five engines on a short 1817. In 1822 he put five engines on a short coal road, the Hetton Railway, near Sunder-the price of foreign iron and the duty have regain than it was to gain a hold in foreign merchandise; but the whole was covered not influenced the price of domestic iron land, which was opened on the 18th of November. Shortly afterward Stephenson became connected as engineer with the Stockton and Darlington Railroad, which was and diversification of the iron and steel inbuilt with the expectation of using horses. Aided by friends he succeeded in introducing three locomotives for use in transporting goods only, each of which weighed 8 tons. The road was opened on the 27th of September, 1825, the day being made the occasion of much festivity, one engine making as much as 12 miles per hour with a load of many times over had we remained content 90 tons. In 1828 one of his locomotives to draw our supplies from foreign sources. Newcastle and Carlisle Railway, and in vice rendered by the tariff during the long 1829 it was decided by the directors of the protracted "era of depression" Manchester and Liverpool Railroad, projected some years before, to try locomotives zealous advocates would have claimed. The on the new line. A competitive trial was weak point of the suggestion that the rate of on the new line. A competitive trial was arranged to take place on the 1st of October, duty should vary inversely as the market value of iron, seems to us to be that in that of Lake Superior ore in the West. It cereseling and living upon the avails of this years in this way. In Cuba it runs general to take place on the 1st of October, duty should vary inversely as the market value of iron, seems to us to be that in that of Lake Superior ore in the West. It cereseling and living upon the avails of this years in this way. In Cuba it runs general to take place on the 1st of October, and it is not perceptibly diminished; I think his children's children will be stelling and living upon the avails of this years in this way. In Cuba it runs general to take place on the 1st of October, and it is not perceptibly diminished; I think his children's children will be stelling and living upon the avails of this motive, the price of which was not to exceed case the fluctuations would not then, as tainly is impossible to buy any first-class stock of goods unless some persevering, agerally for about 20 years."

£550 and the weight limited to 6 tons. facture, is damaging to local interests in trial, which had been deferred to the 6th of irons could be landed here in sufficient was not forthcoming, though this is \$1.50 a their dreams. fortable, but we should think there would be no difficulty in preventing the sale of goods with forged trade-marks or firm and the "Perseverance" were construct
second, the "Rocket," was built by Stephenson, and the others, the "Sanspareil" to no protection at all. There is no assurgoods with forged trade-marks or firm and the "Perseverance" were construct
serve to keep the iron market of the Western States; and if they be offered muntil next spring. Some ore may come in from other sources than Lake Superior, going to consume butter at from 75 to of September, 1830, the line was formally country and the activity of one branch of opened to traffic in the presence of many distinguished persons, and it was or this day that Stephenson ran an engine, carrying a the assumption that he has been correctly member of parliament, Mr. Huskisson, who had been injured by an accident, to his home at the remarkable speed of 36 miles an hour. What has been the outgrowth of these first trials is too well known and too well appreciated by all to require comment. It is to 15th of October, 1829, that we wish to direct attention. From the foregoing sketch it will be seen that loads were carried by steam-power over a permanent way as early not burst upon the world as an accomplished as 1804, or 75 years ago. A series of fact, nor was it the work of one man. It September, 1825, Stephenson ran trains over the Stockton and Darlington road. It is difficult to see why this date or the earlier one has not been chosen, instead of taking what appears to have been only a day marked y one of the trial trips of Stephenson's Rocket." If the ground is taken that the Manchester and Liverpool railway was really the first to give to the public at large a faint illustration of the importance of the new system of transportation, which such men as John Stevens, Evans and Dearborn had foreseen years before, it appears strange that the opening day of that line, the 15th of September, 1830, was not selected instead.

American mechanics, who had closely followed and partly anticipated progress in many lines, were very quick to adopt foreign precedents in steam engineering, and soon entered upon a course of development of their own, showing much originality and ingenuity in adapting the new mode of transportation to the peculiar wants of this country. The first engine run here on a permanent way was the "Stourbridge Lion," imported from England and run for a short time at Honesdale, Pa. In the summer of 1829, Peter Cooper, now one of the few survivors of those stirring times, experlarge scale. In 1800 Oliver Evans, a native of imented with a locomotive of his own desidered to be beyond the range of possibility. Ross Winans, Phineas Davis, E. L. Miller, Horatio Allen, Stevens, Baldwin and many others took an active part in carrying railroad appliances to a greater degree of perfection, and in celebrating the triumph of the locomotive their names should not be

#### Mr. Hewitt's Tariff Views.

In a report of an interview with Hon. A. S. Hewitt, that gentleman is credited with the following expression of views on the subject of protection as regards iron : Now, a word about the duties on iron. On pig and scrap iron, steel rails and many kinds of manufactured iron, they are excessive; \$7 is too much to pay on pig iron. But they have conferred one great benefit. It is that in this era of depression they have prevented this country from being the sink into which the iron of other countries could be flung. Had the duties been low enough the importations of iron would have destroyed our business, and closed those establishments that have just been able to keep above water and are now ready to reap the advantages of this ought only to take effect in periods of extreme depression. Then they protect our home industries. But there should be a sliding scale, and with the return of prosis an element of impracticability in Mr. foreign demand and favor with foreign con-Hewitt's suggestion which will strike the sumers largely because of their reputation reader at once. Moreover, we do not think that any of the facts advanced sustain the assumption that the present duties are excessive. Every iron maker who makes pig metal knows that during the past five years not influenced the price of domestic iron. When the objects of protection had been in great part secured in the development dustries of this country, the price was regulated by the cost of production and the activity of domestic competition. What the country might have gained at one time by buying foreign pig irons at prices somewhat lower than they could be made for in the United States, would since have been lost was used for hauling gravel trains on the What Mr. Hewitt says about the good ser-

now, depend upon the condition of the home ores. It is reported that \$8.50 has been of- gressive American drops in here with a price at which foreign ed by Hackworth and Burstall. The consumer would be able to buy iron at prices but as fully two-thirds, if not three-quarters, two latter were soon withdrawn; the any more reasonable then those he now "Novelty," although well designed was pays on the average, while he would be quite lake ores, the amount will have but little disabled by an accident, so that the certain to lose the incidental advantages effect on the pig iron market. Rocket" remained the victor. On the 15th which result from the prosperity of the the trade with which he is connected. Our comment on Mr. Hewitt's views is based on does not mean just what the interviewer understood him to say. If we are wrong on this point we shall have to conclude that, while the experience of the past few years has taught Mr. Hewitt that there are times

> as to the causes of accidents in mines and the exhibits below, which are all to the right the best means of preventing them. Delegates representing the several mines of the blessings of exhibitors if he will treat them gates representing the several mines of the districts mentioned, lately assembled at Methyr, unanimously agreed to come prepared, at a forthcoming gathering, to give evidence on the following important questions: What effect has the order of working several seams on the emission of gas from roof or bottom ! And how does working by the long wall, pillar and stall, and other systems of mining coal, influence the stability of roof and sides and the suddenness of outbursts of gas? It is proposed to look into the different modes of supporting the roof and sides, and the system of timbering the openings by deputies, as effect ing the security of the workings; and, closely related to this, to inquire into the systems of laying out the workings, their extent, &c. Naturally, much attention is to be paid to the extent to which explosives are used and the quantity of coal thus obtained, with a view to determine the practicability of abolishing their use entirely. The causes of accidents in blasting are twofold; the one, peculiar to collieries, is the firing of gas; the second, more general, embraces hang-fires, premature explosions, &c. Such an inquiry would be a move nearly in the right direction, and it reflects credit upon the miners of Wales that they have spontaneously taken the step. It will depend largely upon their earnestness and sa- in use. gacity to make the movement a success worthy of imitation in other districts and countries. They should be careful, however, not to leave out of consideration the very important item of cost. Reform measures should be made to cause as little sacrifice to the colliery owner as possible, and if they should entail an increase of cost of production, the miners must be willing to take their share of the cost of reducing the risks to life and limb.

A letter recently dorwarded by a Mel-bourne merchant to his Birmingham correspondent contains the following significant passage: "We are very sorry to say that our American trade grows daily at the cost of our English department. Your English manufacturers must employ more labor-saving machinery, and not try to meet this American competition by reducquality. Nothing will help the English more than th's. It is quality alone that "has put the Americans where they are "in these markets—their quality keeps sumption.
"them there; if this falls off they will lose the retail trade here (which is in the hands such heavy machinery for a sugar factory we asked. "Yes," repled he, "it takes we asked. "Yes," repled he, "it takes perity the duties ought to decrease, and tion by American manufacturers. Any atwhen iron is worth \$20 then they should tempt to compete with England in cheap and be taken off entirely. Thus the consumer inferior work will end in disaster, and lead will be protected, and will be able to buy to the exclusion of American manufactures markets.

increased output cannot be had, and the outhas orders and no iron. A large number of the mills, however, have stocks that, with what they can buy, will keep them running in many cases for six or eight months, so that the outlook, as a whole, is not so very advantageous for the blast-furnace men as it might be.

Four engines were entered on the day of market, but upon the price at which foreign fered for Republic at Cleveland, and the ore October. One, the "Novelty," had been quantity to make the condition of our own ton higher than the season's contracts. The built by Messrs. Braithwaite & Ericsson; a iron industry one of extreme "depression" at scarcity of ore which this indicates will

#### More Light Wanted.

To the Editor of The Iron Age. - The great attraction to many of the visitors to the American Institute Exhibitions is, of course, the machinery department. While there are large reflectors in the main hall, giving an abundance of good light, too little regard more particularly to the main aisle, running the whole length of the machinery building, from north to south. Here are a limited A praiseworthy effort is making in South Wales and Monmouthshire, England, on the part of the miners and colliery workmen, to collect information and receive suggestions feet from the floor, and giving little light to number of very ancient snake-shape pendthis year (when the financial prospects of the approaching fair are unusually bright), to a goodly number of large reflectors on the main aisle, similar to the a aisle, similar to those over the lower leading to the Second avenue entrance, and thereby make the machinety depart-ment as cheerful and attractive as need be. EXHIBITOR.

#### Madagascar as a Market.

Mr. Grange Sard, Jr., has received the following letter from W. W. Robinson, United States Consul at Tamatave, Mada-

United States Consulate, Tamatave, Madagascar, Feb. 18, 1879. DEAR SIR: In response to yours of the 21st of October last, asking information in relation to the trade in the use of stoves in Madagascar, I inclose answers to the several questions, made by G. T. Plettenberg, a machinist and dealer in iron articles of all kinds, to whom I had referred your letter. I will add, in explanation, that cooking is done here in a very primitive manner; that is, the fire is kindled on the ground when the cook room has no floor, and on a box of some kind filled with sand or earth, when it has a floor. The smoke "goeth where it listeth"—one part into the eyes of the cook, the balance into the soup or tea. Every kitchen has several short-legged tripods of iron, which are placed on, or in the fire, and the cooking utensils are put upon them when

What is needed here to introduce American products is a resident American agent; there is none here except those engaged in wholesaling our cotton goods and kerosene oil, and they will not meddle with other merchandise. Our unbleached cottons now have complete control of this market, having swept out all others. Now, this has not been accomplished by sending these goods to English, French and German houses here, nor would it ever have been accomplished in that way; but an American house was es-tablished, with American agents, who have managed their business upon American principles of trade with sagacity, energy and perseverence. The result is as above mentioned. I have no doubt, with equal effort and judgment, many other kinds of our pro-ductions could be introduced here with similar success. But in order to accomplish this the establishment of an American commission house at this port will be absolutely necessary—a house that would receive from the "States" and sell on commission any ing the wages of your workmen. We have noticed of late that in some cases the Americans, under the pressure of keen competition, are sending goods of inferior quality. Nothing will help the English for such trade at this place as good, if con-

of Mauritius and Bourbon Creoles, Malabars and Arabs, and consists of European goods, coming via Mauritius and Bourbon, and of course having paid the wholesale profits twice—once in Europe and once to the will be protected, and will be able to buy to the exclusion of American manufactures merchants of those islands—together with from many markets. They have found a all expenses for duties, lighterage and draycheap English goods, in which they do not and found the trader sleeping in his fauteuil expect excellence, and it will be harder to the store appeared to contain a tolerably with cobwebs and dust, and had the appear-Old mill men in the West declare that they never knew the time when pig iron was so hard to get as now. The consumption of pig in Pittsburgh and the adjacent valleys is daily some hundreds of tons in excess of the make. There are no stocks to speak of—at least but a few hundred tons that can be bought at the present rates. Ores for an increase of salary. Substitute that the present rates of salary is sequently, needing a rat trap, and finding none with the European traders, I sent to this store and purchased one for \$1.50 (it would cost about 25 cents in the "States") but well worth the money as a relic of anbought at the present rates. Ores for an would cost about 25 cents in the "States") but well worth the money as a relic of anlook is somewhat gloomy for the mill that in the days of Charlemagne. I suppose the has orders and no iron. A large number of proprietor maintained himself and family tiquity; it may have been made in France on the avails of that trap a week at least (one can live cheaply here if one eats noth-ing but rice), by which time some other customer might probably be forced, like myself, by dire necessity, to buy another article, and so his family continue to live. He has came here, and it is not perceptibly dimin-ished; I think his children's about

I can see no reason why goods caunot be retailed here nearly as cheaply as they can be in the Western States; and if they be so But who, in a community of people of moderate means, is going to consume butter at from 75 to 90 cents per pound, cheese at 75 cents, salt meat at from 40 to 75 cents for hams, and all other goods in the same proportion? It is probable that the volume of trade cannot be much increased under the present policy of the Malagasy government. The interests of commerce and the welfare of this country loudly demand some changes and improvements that can only be brought about by the influential action of some one or all of the powers having treaty relations with this government; but in the meantime I be-lieve, as I have said above, that such an American establishment as I have described would build up a good trade by taking a large portion of that which goes into the hands of those I have mentioned. I do not recommend such house to bring our cot-ton domestics for wholesaling, for this market is fully stocked by houses now well established in that line, but to transact a general commission business as before indicated. Then, I think, you could sell cook cated. Then, I think, you could sell cooking stoves, and others could send their respective specialties. This market at present will not warrant the establishment of a house confined to any one line of goods. Rents for such an establishment would now Rents for such an establishment would now amount to from \$350 to \$400 per annum; lighterage, 50 cents per ton; custom duties, 10 per cent., taken in kind on imports; on exports they vary from 2 to 8 per cent., and are taken in money; no taxes of any kind whatever to pay; currency, the European silver 5-franc piece, cut into all-sized pieces, from I cent to 50, for change. Products for exportation, taken in exchange for goods, are: Dry-salted hides, India rubber, horns, cattle, hogs (they go to Mauritius and Bourbon), coffee, sugar (probably next year), beeswax, cloves, vanilla, rice and some other products in small amounts. The population of this town is unknown, but may be, and I think is, about 6000, of whom perhaps and I think is, about 6000, of whom perhaps one-fourth to one-third are foreigners. Im-ported goods are distributed from this port to all points on the coast, north and south, and large quantities are sent to the capital for the interior trade. The capital itself is said to contain over 100,000 inhabitants, but the number is not known to a certainty. Freight at present from the States is very low, and this, with the freedom from taxes, lower rents and cheaper living here, would enable the merchant to pay insurance and the 10 per cent import duties, and still sell nearly or quite as cheaply as in the States, provided he can secure an equal amount of

I have been inundated during the last year and a half by letters from all parts of the Northern and Western States (and they still continue to come by every mail) like yours, asking information in regard to the chances for selling the writers' respective specialties. Many of these letters I have answered, but many more necessarily still remain unanswered; and as I think this communication gives the information required, as well as suggestions as to what is needed to introduce a greater variety of our manufactures, and consequently to increase the volume of our trade with this country, I will ask you to cause its publication, if you can do so without too much inconvenience, in some journal best adapted to place it un-der the eyes of the greatest number of our manufacturers and exporters.

Very respectfully yours, W. W. Robinson, U. S. Consul. Grange Sard, Esq., North Ferry street, Albany, N. Y.

#### A Large Wheel.

The Paterson (N. J.) Guardian prints the

following:
The Watson Manufacturing Company has nearly completed the largest cog-wheel ever made in Paterson. It is 20 feet in diameter, and weighs over 12 tons. It is made in segor general merchandise. Such house should conduct a retail and wholesale trade in general merchandise. I consider the opening for such trade at this place as good, if conducted on American rules of trade, i. e., to ducted on American rules of trade, i. e., to attention several times, we asked a gentlesell at low profit and turn the money quickly, man sitting near, who seemed to be superintending the job, yesterday atternoon, tending the job, yesterday atternoon, it was for! "It is for a sugar factory in it was for! "It is for a sugar factory in it was for!" it takes as heavy machinery to crush sugar cane as it does to roll iron, if not heavier. This wheel is to take the place of one that was broken because it was too light. Sometimes the shafts of the rollers break short off, as if all expenses for duties, lighterage and drayage twice at those points, and then the freight thence to this port), I mention one etcr. Some of the cane is very hard instance: On my arrival here, three and a deed. This wheel is attached to the first roller, and is driven with a 15-inch pinion propelled by a 150 horse-power engine. So you can see how powerful it has to be." ""
suppose it takes a good deal of oil to lubri cate such a lot of gearing, with so great a strain?" suggested we. "Oil wouldn't do," answered our informant. "The small wheel or pinion is set into a box of tar, so that it is kept constantly covered, and that lubricates Tar is a good deal better lubricator than oil for such a purpose as this." "I did not know that so much power was required for crushing cane," we repeated. "Yes," we the reply; "sometimes there are hard spo or knots, in the cane that make machinery almost crack, heavy as it is.
This large wheel only revolves twice and a half times a minute, so that you see it goes slowly, too. Otherwise it might break the machinery, instead of 'stalling' the engine. Furthermore, it has to be slow to get all the ruthermore, it has to be slow to get all the juice out of the cane. The sugar cane in Cuba becomes very tough with age. That is, it is only planted about once in 20 years. Every year, or oftener, it is cut off, the same as you would cut off corn. Then it sprouts again and grows on. You don't have to plant it every year, as you would

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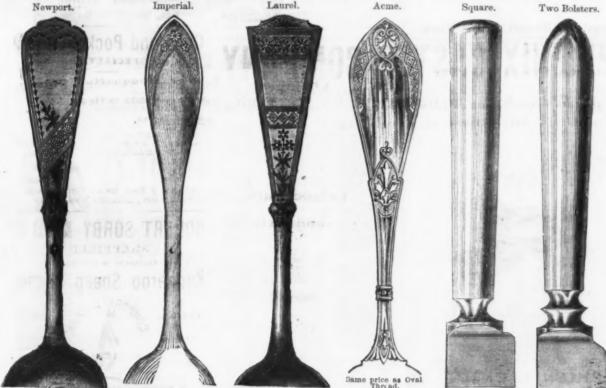
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#### The History of Paleontology.

At the recent meeting of the American Association for the Advancement of Science, Prof. Marsh, whose labors in geology have brought him international fame, read an address on the history of paleontology, the science dealing with the fossil remains in the rocks. The following is an abstract of his address on a subject of which but little is known to the general public:

It will be convenient to regard the history of

It will be convenient to regard the history of paleontology as embraced in four consecutive periods. During the first period there was a long and bitter contest as to the nature of fossil remains—whether they were freaks of nature or the relics of animal life. Some of nature or the relics of animal life. Some of the ancients hit upon the correct, and some upon incorrect, answers. Zenophanes, of Colophon (500 B. C.) and Herodotus (450 B. C.) approached the true theory as to fossils, while Pythagoras (582 B. C.), according to Ovid, had the idea of the rise of land above the water, carrying sea-shells. Aristotle (384-322 B. C.) put forth correct notions as to changes of land and sea, but his views about spontaneous birth of men and animals from moist clay served, unfortunately, to from moist clay served, unfortunately, to explain the formation of fossils, also, in a similar way. Other Greek writers had even more fantastic theories. The Romans added little to the world's knowledge on the subject, but Pliny names and describes several

the rocks for some inscrutable purpose. During the seventeenth century there were numerous essays on fossils, and many catalogues. The true theory made important advances. Steno, a Dane, proved the identity of fossil sharks' teeth with those of Mediterranean species. He first put on record the significant fact that the oldest rocks contain no fossils. Gradually the notions of "plastic force" and "fermentation" ceased to prevail, and what Prof. Marsh calls the second period in this history main characteristic of this period was the general belief that fossil remains were deposited by the Mosaic deluge. Many books that became famous supported this view. The improvement still goes on. We see no rush, and there is no feverish excitement. The advance is solid, and has been brought about by healthy and legitimate consumption.

Pig irons have advanced slowly and surely since the resumption of specie payments. The same author referred two fossil vertebræ to that "accursed race destoyed by the flood." Cuvier (1769-1832) afterward ascertained that the first of these relics had belonged to a gigantic salamader, and the remainder to an ichthyosaurus. The lecturer told a curious story of Beringer. Who was a Professor at the University of afterward ascertained that the first of these relics had belonged to a gigantic salamader, and the remainder to an ichthyosaurus. The lecturer told a curious story of Beringer, who was a Professor at the University of Würtzburg, and had taught his pupils that the "figured stones" were "sports of nature."

Some of the fun-loving students carved fantastic forms from the limestone of the region and buried them where the Professor.

Als and will be blown in probably some Würtzburg, and had taught his pupils that the "figured stones" were "sports of nature." Some of the fun-loving students carved fantastic forms from the limestone of the region, and buried them where the Professor used to dig for fossils. The new treasures were soon discovered; the delight of the finder encouraged further manufacture and taxed the students' ingenuity. At last Beringer had a large and unique collection of forms new to himself and to science, and after long and patient study, his work upon them appeared (1726) with 20 folio plates. The deception became known soon after the book was published, and the luckless Professor was overwhenled with ridicule. He tried to buy and destroy the volumes already issued, but they rose in price as they became scarce, and finally he died in mortification and poverty. But some of his family, it is said, profited by the notoriety of the work, and repaired their fortunes by the sale of a second edition. The effect on science was, on the whole, a benefit, by causing greater caution on the part of investigators. Among second edition. The effect on science was, on the whole, a benefit, by causing greater caution on the part of invostigators. Among the writers of the period whose works were cited by Prof. Marsh was Voltaire (1694-1778), who suggested that the shells found in the Alps were dropped by Crusaders returning from Palestine. Buffon, in 1749, asserted the theory of the subsidence and elevation of continents, but afterward recented. science, and published a declaration of implicit faith in the Mosaic narrative. great contest between two opposing schools of geology—the Vulcanists and the Neptunists—belongs to this period. Werner Neptunists-1750-1817, the advocate of the aqueous theory, is credited with first making the important observation that different rock fornations can be discriminated by the fossils

In the third period, toward the close of the eighteenth century, the belief declined that fossil remains were deposited by the Mosaic deluge. One characteristic of the new era deluge. One characteristic of the new era succeeding was the determination of fossils by comparison with living forms; another succeeding was the determination of fossis by comparison with living forms; another was that every species, living and extinct, had a separate creation. Cuvier and Lamarck (1744-1829), in France, and William Smith (1769-1839), an English surveyor, founded the modern science of paleontology. While wrong on some important points, Cuvier was the first to prove that the earth was inhabited by a succession of different series of animals, each peculiar to its own epoch. Lamarck's conclusions were of yet higher value, by paving the way to a true theory of evolution. William Smith announced a method of determining strata by their fossils. The list of names illustrious in this science during the present century, as given by the lecturer, was very long, and included publications in England, France, Germany, Italy, Belgium, Holland, Russia, the Scandinavian countries and North Amer-Germany, Italy, Belgium, Holland, Russia, the Scandinavian countries and North Amer-

ica. Full justice was done to Louis Agassiz, Richard Owen, Blumenbach and Von Meyer. At the close of the third period the advances of the science were carefully estimated. More than 30,000 new species of extinct animals and plants had been described. The order of succession found in any one part of the earth was essentially the same in all parts. The higher forms made their appearance successively. All the older fossils were of extinct species. Finally, the changes of the earth's surface were ascertained to have been ance successively. All the older lossils were of extinct species. Finally, the changes of the earth's surface were ascertained to have been mostly of a slow and gradual kind. Twenty years ago the belief in special creations had been undermined by well established facts. But the question remained, how had the changes of form been brought about? Then it was that Darwin spoke the magic words, "Natural Selection," and a new era in science began. Prof. Marsh dates the revolution in belief on this subject from the publication of Darwin's "Origin of Species" in 1859. The characteristics of the present period in paleontology were stated as "the belief that all life, living and extinct, has been evolved from simple forms," and "the accepted fact of the great antiquity of the human race."

The progress made during the past 20 years in this science is very great. The lecturer enumerated many of the noteworthy additions to the number of extinct species. A more important fact is that the geneal-

more fantastic theories. The Romans added little to the world's knowledge on the subject, but Pliny names and describes several fossils. Then comes a blank of 1300 or 1400 years, in which Prof. Marsh finds only two references to the subject. Not until the sixteenth century did the study of fossils begin to attract much attention. Great discoveries of such remains in Italy then aroused discussion, in which Lenardo da Vinci (1452) took part and opposed the common notions of their having originated through "nature and the influence of the stars." Fracastoro was another strong opponent of the theory that fossils were products of a "plastic force" of nature. Conrad Gesner, in 1565, published a catalogue of a collection of fossils. But the old views still held sway and were advocated by eminent writers. And there was also a theory that minerals grow from seeds; and yet another notion which found advocates, claiming that the Creator made the fossils just as they were found in the rocks for some inscrutable purpose.

During the seventeenth century there were numerated many of the number of extinct species. A more important fact is that the geneal-ogies of various existing mammals have been traced with considerable probability through allied forms in closely connected with considerable probability through allied forms in closely connected with considerable probability through allied forms in closely connected with considerable probability through allied forms in closely connected with considerable probability through allied forms in closely connected with considerable probability through allied forms in closely connected with considerable probability through allied forms in closely connected with considerable probability through allied forms in closely connected with considerable probability through allied forms in closely connected with considerable probability through allied forms in closely connected with considerable probability through allied forms in closely connected with considerable probability through allied f partments of science, from the inanimate to the living world. The rapidly converging lines of research seem to meet at the point where organic and inorganic nature become one. This point will yet be reached.

#### The Southern Iron District ..

notions of "plastic force" and "fermentation" ceased to prevail, and what Prof.

Marsh calls the second period in this history
began with the eighteenth century. The
main characteristic of this period was the

Neil Works. When done with that, the company will probably resume the production of steel pig for the Roane Works.

Mill products of all kinds enjoy a healthier market than has been seen since 1873. Orders are plenty. None come from specuders are plenty. None come from speculators, because the margins are too small and fluctuations too trifling to tempt them. Buyers are mostly consumers. Consumption would be greater if the material could be tion of continents, but afterward recanted, and This is shown by two facts: 1. Mills under pressure from the Faculty of Theology are all sold ahead 2. Old rails and all other at Paris. He did not desire to be a martyr old wrought irons are extremely scarce, and becoming so high-priced as to force the expansion of puddling appliances everywhere, though the scarcity of these substitutes for muck bar some time ago suggested an increase of puddling furnaces.

Indications here, as forecast by the oldest

and wisest men of experience, are that con-sumption will keep rather in advance of production for a number of years. The ex-treme caution which characterizes the en-largement of products, either crude or finished, would seem to warrant such a predic-

The Cincinnati Southern Railway, which will considerably aid the iron market here, as well as induce foreign capital to embark in the iron business in this section, is being

The English Admiralty are introducing heavy sewing machines for sailmaking.

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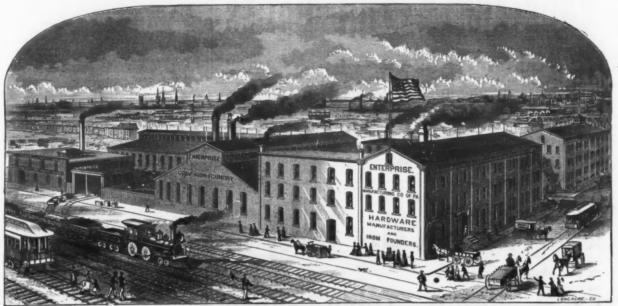
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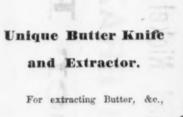
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Coal Hods

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Boller Flues

Bolts, Stove

Borax

Block Tin 'Pipe

Bismuth

Babbit's Metal

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Fell, Sheathing

Foil, Lead

Fittings, Brass

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Handles, Bucket

Circles, BRASS.

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Galvanized

Hoop Iron, Black

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Sheets any Size,
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Spring,
Hoop,

Black, all kinds

Iron, Galvanized

" Leaded

RESERVOIR METAL.

Genuine Russia

Corrugated

PIPE and SHEET LEAD.

Boiler Flues

Imitation

Knobs, all kinds

" Sheet

Foil

ec Pig

Lead, Pipe

" Copper

Kettles, Brass

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Interior View of Store, 525 Arch Street.

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From 18 to 6 Inches Diameter.

Boiler Flues,
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Feed Pipes,
Condensers, Brass and Copper,

Heater Tubes,
Pump Chambers,
Still Worms,
Hand Rail,

From 1 to 3 inches.

Lamps,
Hand Rail,
Molding Oval,
Fancy Patterns.

SHEET ZING,

Harvey'

Unprogressive French and Swiss

Judge Kelley, in a letter to the Philadel-

Judge Kelley, in a letter to the Philadel-phia Times, says:

I forget the date at which Livingston came as our Minister to France. It was, however, before the adoption of the Consti-tution, or as the representative of Washing-ton's Administration. Before arriving in Paris he had been painfully impressed by the fact that most of the agricultural laborthe fact that most of the agricultural laborers were bowed and exhibited other signs of premature old age. He observed also, that their chief implements were hoes, with handles but 3 feet long, and sickles which required them to stoop even lower while reaping than they had done while cultivating their crop. He was a philanthropist, and in the hope of remedying a national evil he not only brought to the attention of many Frenchmen of influence the fact that American fagrages used implements which enabled can farmers used implements which enabled them to stand erect, but went further and imported a large number of long handled hoes for gratuitous distribution. Their use would, he hoped, demonstrate their vital superiority and cause their general adoption. In this he was mistaken. They were soon discarded, and Livingston's papers thenceforth abounded in dissertations on the difficulty of inducing a people to change their practical methods. Here, too, he was in error. In the choice of tools, the people whose condition he sought to improve were not free agents, but were-as the masses o not free agents, but were—as the masses of mankind always are—subject to social and physical conditions. Had Livingston first asked why the use of longer hoe handles had not occurred to the French paysans his labors in their behalf would probably have taken a more practical turn. Ho has, however, many successors among American travelers who vex one's ears with the question. Why do these papels not use our labor. travelers who vex one's ears with the question, Why do these people not use our laborsaving agricultural machinery, though they see unmistakable proofs—such as the diversity in kind and age of the crop—that the holdings of lands in the rural parts of Belgium, France and Switzerland are not, on the average, so large as building lots in the Twenty-second, Twenty-fourth, and Twenty-second, Twenty-fourth, and Twenty-second, Topes who seventh Wards of Philadelphia. Those who own or rent these patches of land live in villages and labor in workshop or in factory. Old men and women—generally more of the latter—attend to the crops, which, even when of grain, are carefully weeded. The ground may be prepared by the spade, though the old-fashioned, short-handled hoe is still frequently used in breaking it up but much of the work is evidently done but much of the work is evidently done with trowels. The prevailing appearance of premature old age, which aroused Livingston's sympathies, is attributable to this inevitable method of manual farming and to the habit which the women have of carrying, strapped on their backs, huge baskets, often heavily loaded.

Completion of Export Bond After Time Allowed by Law.—The attention of the Treaury Department having been called to the practice of allowing exporters, for benefit of drawback, in certain cases to ex-ecute bond after the clearance of the export ressel without authority of the Department, it is observed that section 3037 of the Revised Statutes provides that whenever the exporter entering any merchandise for the benefit of drawback shall not have completed such entry by giving the required bond within the period prescribed by law, the Secretary of the Treasury, on applica-tion to him made by the exporter, may, if he shall be satisfied that the failure to complete the entry was accidental and without any intention to evade the law or defraud the revenue, direct the completion of the entry. The section of the law before mentioned provides that, in the cases therein specified, the Secretary of the Treasury may specified, the Secretary of the Treasury may authorize the completion of the bonds, and contemplates action by him only on the presentation of an application in each case by the exporter and with a report of the faces by the collector. The power vested in the secretary by this section of law is a quasi judicial one, which, in the opinion of the department, cannot be delegated in a general way to the collectors of customs. Collectors of the collectors of customs. department, cannot be delegated in a general way to the collectors of customs. Collectors are therefore instructed that such incomplete entries should not be perfected in any cases, unless authority for their completion be first obtained from the depart-

The Paris correspondent of the London Telegraph announces that M. de Lesseps has sent to Central America several expert engineers, including M. Donoreaux, whose works on the Danube and at Antwerp are well known, to examine the plans of the Panama Canal and to ascertain the probable expense of building it.

The government of Costa Rica is constructing a railroad from the Atlantic to the Pacific. It will probably be finished within a year or two, when it will vigorously compete with the Panama Railroad. Costa Rica is in a sound financial condition, the estimated revenue for the current year being mated revenue for the current year being \$3,000,000, and the estimated expenditure

#### Special Notices.

JOHN E. SWAN & BROS. (Lim.)

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OLD IRON RAILS.

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TO WHOM IT MAY CONCERN. -The firm

Special Notices.

#### Second-Hand& New Tools Steel or Iron Rails, Steel Ties, FOR SALE.

September List.

The Tools in the following list are all of Wood, Light & Co.'s make, have been used, but are all in good order and will be sold very

low:

Five Engine Lathes, 25 in, swing 6 ft. bed.

Six Engine Lathes, 20 in. swing 7½ ft. bed.

Five Engine Lathes, 20 in. swing, 8 ft. bed.

One Engine Lathe, 21 in. swing 6 ft. bed.

One Engine Lathe, 22 in. swing 16 ft. bed.

One Engine Lathe, 24 in. swing 16 ft. bed.

One Engine Lathe, 24 in. swing 12 ft. bed.

One Engine Lathe, 24 in. swing 12 ft. bed.

Two Upright Drills, 29 in. swing, not geared.

Two Planers, 32 in. x 30 in. x 10 ft.

One Planer, 32 in. x 30 in. x 10 ft.

One Planer, 42 in. x 36 in. x 15 ft.

One Planer, 42 in. x 36 in. x 15 ft.

One Shaping Machine, 12 in. stroke.

Four Bolt Cutters, various sizes.

One Horizontal Boring Lathe.

The following are all new tools to be

The following are all new tools to be sold very low, and are all Wood, Lighte & Co.'s

One Engine Lathe, 20 in. swing, 20 ft. bed. One Shaping Machine, 14 in. stroke. Seven No. 2 Bolt Cutters. One No. 1 Bolt Cutter, with centers. Five No. 2 Bolt Cutters, with center.

Also the following miscellaneous Tools:

Also the following miscellaneous Tools:
One Portable Engine, 6 in. cylinder.
One Hand Milling Machine.
One "Pond" Index Milling Machine.
Three Chase Patent Pipe Cutting Machines.
Two Engine Lathes, 12 in. swing, 6 ft. bed. Two
Engine Lathes, 12 in. swing, 6 ft. bed. One Engine Lathes, 12 in. swing, 6 ft. bed. One Engine Lathes, 12 in. swing, 6 ft. bed. Three Engine
Lathes, 20 in. swing, 6 ft. bed. Three Engine
Lathes, 20 in. swing, 8 ft. bed. Three Engine
Lathes, 20 in. swing, 8 ft. bed. Three 4-spindle Drills.
One Gear Cutter. One new "Hardaway" Bolt
Heading Machine, to head up to 74 in. bolts. One
mew "Hardaway" Bolt Heading Machine to head
up to 1½ in. bolts. A lot of Saw Tables and
Wood Working Machinery.
Please specify which of the above tools you want
and we will forward all particulars.
The above tools will be sold very low, and can be
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A WOODRUFF & BEACH BEAM ENGINE, low pressure, 42 inch cylinder, 84 inch stroke, with FOUR TUBULAR BOILERS,

The Geo. Place Machinery Agency,

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AND GENERAL MACHINE DEALERS,

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The undersigned desires to inform all Manufacturers of Hardware throughout the United States that he has fitted up rooms, centrally located, well lighted, &c., running through from Chambers to Reade street, for the exhibition of manufactured goods in all lines of hardware. Any manufacturer can at a small annual cost exhibit his wares to actual buyers throughout the year, and all visitors can examine them free.

The advantages to both manufacturers and buyers are too apparent to need any explanation. For further particulars and application for space address.

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Axles, Forgings, Bars, Plates, Nail Sheets Billets.

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This office has been established to furnish to inventors, mechanics and manufacturers skilled professional aid and advice at low cost. It is based on the co-operative system. A number of well-known engineers, mechanios, patent experts, chemists, metallurgists, editors, printers, engravers and other specialists have entered into special contracts of employment, and through these contracts we are enabled to offer their services at rates much lower than if direct application were made to the parties themselves. At the same time, our clients have the assurance that their work is entrusted not only to competent hands, but to the best expert skill attainable.

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#### FOR SALE.

A valuable property in the State of Wisconsin, free from all incumbrances, embracing an inexhaustible deposit of Iron Ore and about 900 acres of land, of which about 700 acres are covered with a heavy growth of large oaks and other hardwood timber. The ore is rich and free from even a trace of 1-hosphorus. The facilities are unusually favorable for the manufacture of a superior quality of Charcoal Iron, and as cheap, if not cheaper, than can be manufactured elsewhere in the United States.

It is on the line of one of the leading railroads of the State, and is accessible to all Mississippi ports and the lakes.

The veins or mines are to a certain extent developed, and had been successfully worked for some time.

oped, and had been successfully worked for some time. The greater part of the land would be well fitted for farming purposes, as the ground is very fitted for farming purposes, as the ground is very fertile, and the price asked for it will not exceed that asked for common farming land. Property in New York City or vicinity will be taken in exchange.

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IN SCRANTON, PA.

On corner of two main streets, only one-quarter mile on level road from two railway stations. Size of lot 50 by 150 feet; engine, 3,5 horse power. Buildings and machinery first-class and nearly new.

Underlaid and surrounded with coal, the cost of fuel for steam is merely nominal. Best forge coal \$1,50 per ton. With complete lines of shafting, &c., the premises can be easily and cheaply adapted to any light manufacturing business.

Former proprietor, after successfully manufacturing Axes and Edge Tools in the vicinity for 30 years, designed and built this shop at an expense of \$10,000 for the continuance of the business, but falled during the late depression.

Having neither time nor ability to run these works, i will sell very low on easy terms.

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The undersigned would take charge of a few exhibits at the Melbourne Exhibition. Best New York references.

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#### P. O. Box 102, Melbourne. Valve Refitting Machines.

All users of Globe Valves should have one. Send for circular and price list. A few good agents wanted to sell on commis-

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Hardware Stock and Fixtures in one of the bes owns in Nebraska. Will be sold low for satisfac tory reasons. About \$2500 required. A splendid

HARDWARE. Box 21, Lincoln, Neb.

#### FOR SALE.

Rail or Bar Train complete, with rolls for rolling rails from 12 to 65 lbs., and also for all sizes of bar iron, flats, rounds and squares, in perfect condition having been in use for a short time only. For terms, &c., apply to J. M. BROWNSON,

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Situation as Salesman, Business Manager of Situation as Salesman, Business Manager or correspondent, by a gentleman who has been connected with a large rolling mill for many years, and has an extensive acquaintence with the merchants and consumers of iron throughout the country. Address,

Country. Address, SALESMAN, Office of The Iron Age, 77 4th ave., Pittsburgh, Pa.

#### For Sale,

One Iron Planer to plane five feet square and ten feet long. Cross and angle feed. Cross head moved up and down by power. Machine in excel-lent condition. Address

Special Notices.

#### LARCE AND FRESH STOCK OF SECOND-HAND TOOLS.

te Hand Lathe, 15 in. x 8 ft.

ue Hand Lathe, 15 in. x 8 ft.

ue Upright Drill, 24 in. with bk. gear and self feed.

v No. c, 2 Spindle Drill,

v No. 0, 3

v No. 12

v No. 2 Spindle Drill,

v No. 13

v No. 14

0. 1, 3 " 2 spindles geared for heavy 0. 1 Fower Milling Machine. [work. o. 3 Screw Machine. 0. 2 " Plain Head. 0. 2 " wire feed.

Double Cam Cutting Machine.

WOOD, LIGHT & CO.'S TOOLS,
20 in. 885 ft. Engine Lathes, bk. geared, s
ting, rod feed, glo rest, face plate, counters
8 in. x 10 ft. ditto.
2 if in. x 35 ft. ditto.
5 in. x 8 ft. ditto.

One is in. x oft. Gibrest, rod feed (not screw cutting).
One 24x21 in. x of t. Planox, dyna, cross and angle feed in the head.

MISCELLANEOUS TOOLS.
One Engine Lathe, zo in. x 12ft. Lambertville fron Wks.
One " 10 in. x 05 ft.
One " 10 in. x 05 ft.
One " 10 in. x 05 ft.
One " 10 in. x 5 ft., Fifield. New.
One " 10 in. x 5 ft., Fifield. New.
One " 10 in. x 5 ft., Fifield. New.
One " 10 in. x 5 ft., Fifield. New.
One " 10 in. x 5 ft.
One " 10 in. x 5 ft.
One " 20 in. x 7 ft.
One Orank Planer, 26 in. stroke.
One Shapling Machine, 8 in. stroke.
One Shapling Machine, 8 in. stroke.
One Shapling Machine, 8 in. stroke.
One Shapling Machine, N.Y.S.E.Co. New.
One Wood & Light Milling Machine.
One Brainard Milling Machine, No. 8.
Seven Lincoln Pattern Milling Machine.
One South & Garvin Hand Milling Machine.
One South & Garvin Hand Milling Machine.
One South & Garvin Hand Milling Machine.
One Suspension Drill. Ames Mfg Co.
One Suspension Drill. bk. geared self feed.
One Kotary Shear for sheet metal.
One Kotary Shear for she

E. P. BULLARD, 14 Dey st., New York.

#### TRUSTEE'S SALE OF TENNESSEE IRON & STEEL WORKS, CHATTANOOGA, TENN.

By virtue of the authority and power vested in m by a deed in trust, executed on the 17th day of June 59, by the Teunessee Iron and Steel Company, to m is Trustee, and registered in the Register's Office of Iamilton County, Tennessee, in Book "G," volum, pages 306 to 315, I will on

Thursday, the 25th day of September, 1879. I front of the Court-House door, in the city of Chatanooga, Hamilton County, Tennessee, expose to said a sell at public outry, to the highest bidder, the illowing described property, to wit:

The Works of the Tennessee fron and Steel Commy, consisting of one 8 in, and one 18 in, train of oils for making all sizes of merchant iron, together ith Furnaces, Tools, Buildings, Land upon which e Works Stand. For more full description, of which forence is made to said deed of assignment, and hich will be exhibited on the day of sale, as will, so, the terms of sale be made known at the time disale is made.

8. M. WINCHESTER, Trustee.

This 2ad day of Aug., 1879. Chattanooga, Tenn.

TO MANUFACTURERS AND CAPITALISTS.

FLOWER PINS. PATENT FOR SALE.

J. H. PLUMMER.

1276 Pacific Street, Brooklyn, N. Y A PRACTICAL IRON MANUFACTURER AND owner of a Rolling Mill, 8 Puddling and Heating Furnaces, 2 Trains of Rolls, and all appliances; ready for immediate business; location not excelled in Eastern Pennsylvania; will sell, form a limited partnership, or take a partner on favorable terms. For particulars address C. E. W., Office of The Iron Age, 220 S. 4th st., Philadelphia.

To Canadian Capitalists or Manufacturers of Hardware.

Iliabilitici Ul Harmand.

I wish to arrange with a suitable party for the manufacture and sale in Canada of Dearborn's Adjustable Blind Awning Fixture, for which I hold Canadian Patent. We have established a large and growing trade in the United States, and the same can readily and very profitably be done in the Provinces. Address for full particulars, C. P. DEARBORN,
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#### Fork and Hoe Maker Foreman Wanted.

A good position is open for a competent and experienced man.

W. S. LASHER, 90 Washington street, Chicago

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WANTED—A SITUATION IN A HARD-ware Manufacturing or Jobbing House by a young man of 12 years' experience, at either office or outside work. Can give satisfactory references. Or would represent some out-of-town manufacturer to sell goods to the trade in New York and vicinity. Address

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LOCK BOX 20, AHERIOWR, FR.

SITUATION WANTED IN CITY OR COUNTRY, wholesale or retail, by a man of long experience in the Hardware trade in New York City, and referring to a first-class house with whom he has been connected for 16 years. A competent book-keeper, a hard worker and good salesman.

Address for reference, HARDWARE, P. O. Box 1218, New York City. WANTED,—A SITUATION AS SUPERINwho thoroughly understands the manufacture of
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FOR SALE—About 70 tons Horse Railroad track; has been used but httle. Also 2 cars for one or two horses, nearly new. Parties in want of the above described articles, will find it to their interest before purchasing to inquire of ANSEL HURLBUT, New Haven, Ct.

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One 9-inch Train Holls,
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Both with Housings,
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One Pair Shears,
One Lot Steel Ingot Molds,
Three Large Woodward Steam
Pumps,
Three Small Steam Pumps,
Two Holsting Engines,
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This edition is handsomely bound in cloth, and will be maited to any address upon receipt of the price secrets.

price. 50 cents. Boun I in leather, with silicate leaves, price \$1. EDWARD B. LEIGH,
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LONDON,

\*9 Pemberton Square, Boston, Mass., Issue Licenses to use the Process for the

Manufacture of Iron and Steel In the Bessemer Converter, Crucible, Biemens-Martin, Puddling, Blast and Cupola Furnaces. The use of this Process improves the quality of the product, saves fuel and labor, and does not re-quire any change in furnace or manner of working See page 17 of The Iron Age of Oct. 25th, 1877.

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These books may also be had at publishers' prices of
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Improved or wild, for HARDWARE, STOVES OR NAILS. Land is near Topeka.

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We can offer special inducements in the way of very superior quality guaranteed, and at fair prices. Being ourselves large consumers and re-juiring the most perfect castings, other work is MALLORY, WHEELER & CO., New Haven, Conn.

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For the transportation of IRON, IRON ORE, COAL, &c., Between Lake Champlain, New York, Philadel-phia, Pa., Wilmington, Del., and intermediate places. For Freight apply to
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#### FOR SALE.

Job Lots and Bankrupt Stocks Hardware. Great bargains offered to the trade.

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Sanderson Bros. Steel Co.

A limited number of shares for sale by EDWARD FRITH & SON, 241 Pearl street, New York.

# Trade Report.

WEDNESDAY EVENING, September 3, 1879.

The chief interest of the week in financial circles has been the large importation of gold. It is estimated that not less than \$20,000,000 have been started from Europe, of which about \$10,000,000 have arrived. The money market has been firm. The average rate on call loans is 5 @ 6 %. The rate of discount on prime business paper is 6 @ 7 %. A correspondent of the London Economist, writing from Paris under date of August 21, says:

"The advances on bullion have also de creased a million and a half, gold being now demanded for export to America for corn, over 20,000,000 of francs (£800,000) having been shipped from French ports for the United States during the last three weeks. At this moment, taking into account the exchange between Paris and London, and London and New York, there is an advantage in remitting by gold direct from France rather than by bills from London, although the Bank of France advanced its price for gold bullion to four per mille. The bank has, in fact, now sold the whole of the small stock of bar gold and foreign gold coin it held, and its reserve now consists wholly of Napoleons and 5-franc silver pieces, excepting, of course, the Italian small coin it has collected to return. The English exchange is higher at 25f. 321/2c. but no exports of specie to London are reported, all the gold being taken for America. One of the chief bullion houses here estimates that the insufficient crops in England, France and Germany will necessitate purchases of wheat to the amount of 500,000,000 of francs, or 20,000,000 sterling, in the United States. Money is, nevertheless, still abundant here, and discount is easy at 11/2 for bank bills, and 15% for commercial paper. The proposed changes in the business practice of the Bank of France, to which I referred last week, have been since adopted, and will be applied from the 1st of September." The market here for foreign exchange

continues dull. The posted rates of the leading drawers of sterling are \$4.82 and \$4.84; the actual rates are about \$4.81 and 84 83@ \$4.831/2. The enormous exports from New York last week (in value \$9,982,608, the largest of any week on record) were represented in the foreign exchange market-by the bills which recently broke down the rates for foreign exchange.

Government bonds are firm, and there is a good, steady demand for all classes of steadily gaining strength. investment shares. We give below the closing quotations of United States bonds.

times buoyant. The principal dealings are in the railroad and telegraph shares usually the favorites with speculators. We give below the closing quotations of active

The bank return shows an increase of \$1,278,425 in surplus reserve, which now stands at \$3,759,650, against \$16,907,775 at this time last year, and \$11,798,025 at the corresponding period in 1877. The loans show a decrease this week of \$5,409,800; the specie is up \$53,600; the legal tenders are decreased \$559,300; the deposits other than United States are down \$7,-136,500, and the circulation is increased

The following is an analysis of the bank totals of this week compared with that of last week :

	August 23.	August 30.	Com	parisons.
Loans Specie Legal t'nd'rs Tot, reserve.	19,631,100 41,838,600 61,469,600	\$258, 160, 300 19,684, 700 41,279, 300 60,954,000	Dec. Dec. Dec.	5,409.800 53,600 559,300 505,700
Deposits Reserve re-	235,953,900	228,817,400		7,136,500
quired Surplus Circulation.	58,988,475 2,481,222 20,827,500	57,204,350 3,759,650 30,442,500	Inc.	1,784,125

The foreign trade movements at the port of New York since our last issue are shown in the following tables:

For the week ended August 30:

Dry goods General mdse	1877. \$2,493,116 3,552,978	1878. \$2,033,449 4,027,352	1879. \$2,608,059 4,094,400
Total for week. Prev. reported	\$6,046,094 221,342,417	86,120,801 186,791,912	\$6,702,469
Since Jan. 1	\$227,388,511	\$192,915,743	\$209,909,550

Included in the imports were items of merchandise valued as follows:

	Quantity.	Value
Anvils	335	\$96
Brass goods		3.11
Bronzes		5,12
Chains and anchors	10	38
Copper		8
Cutlery		40,01
Gas fintures	3	1,12
Guns	124	20,60
Hardware		69
Iron, pig, tons		7,50
Iron, sheet, tons	9	79
Iron ore, tons	3.378	30,63
Iron, other, tons	I.579	40,50
Railroad bars	5,278	39,52
Lead, pigs	I,345	4:47
Metal goods	176	16,67
Nails	34	8,37
Needles		81,66
Old metal		1,22
Platina		4,230
Percussion caps	13	8,479
Saddlery		3,67
Steel	4,160	22,41
Spelter, lbs	55,115	1,76
Silverware	8	74
Tin, bzs	15,48x	94.03
Tin, 1,734 slabs	.177,530	28,56
Wire	35	6,41
Zine, lbs	. 69.851	2,830

EXPORTS, EXCLUSIVE OF SPECIE For week ended September 2;

For the week Prev. reported	1877. \$7,261,045 175,524,409	1878 \$7,625,433 223,323,435	1879. \$9,982,603 211,079.140
Since Jan. t	182,785,454	\$230,248,918	\$221,061,748
E	XPORTS OF	SPECIE.	
For the wee	k ended A	u rust 30 :	
Total for the we Previously repor	ek		\$222,140
Total since Jan.	1, 1879		\$12,120,241
Government	bonds	at the cl	ose were
quoted as follo	ws:		
*		Bid	Asked.
U. S. Currency 6 U. S. 6's 1880 reg U. S. 6's 1880 cou U. S. 6's 1881 cou U. S. 5'8 1881 reg U. S. 5'8 1881 cou U. S. 5'8 1881 cou U. S. 4½'8 1891 r U. S. 4½'8 1891 r	istered upon v registered upon ustered upon egistered	103 ½ 103 ½ 104 ¾ 104 ¾ 102 ½ 102 ½ 104 ¾	10316 10456 10456 10236 10236 10236
U. S. 4'S 1907 ."e2 U. S. 4'S 1907 COU	istered.	1001	10014
U. S. 4'S 1907 COU	(pon		a IOE%
The following		e closing	quotations
of active shar	'es:		
American Distri- Atlantic and Pac Burlington and G Bur, Cedar Rap Canada Souther Canton	ific Telegra Quincy ids & North n	114 1	6634 3534 11434 6534 5935 4334 734

	American District Telegraph 65	
9	Atlantic and Pacific Telegraph 35	
	Burlington and Quincy	
3	Burlington and Quincy	
1	Canada Southern 58½	
	Canton 4I	
-	Col., Chicago and Indiana Central 71/2	
0	Cleveland and Pittsburgh 9834	
	Chie., St. Paul and Minn 40	
3	Chicago and Alton	
l	Delaware, Lack, and Western 583%	
	Delaware and Hudson Canal 4758	
1	Express-Adams	
ľ	" American 45	
1	United States	
ı	" Wells, Fargo & Co 981/2	
ţ.	Erie	
r	" Pref	
	Fort Wayne	
l	Hannibal and St. Joseph Pref 201/2	
	Pref 43	
	Illinois Central85%	
)	Kansas Pacific 63½ Kansas and Texas 15½	
	Kansas and Texas 15%	
	Lake Shore	
	Louisville and Nashville 54%	
	Michigan Central 801/8	
	Morris and Essex gr 36	
	New Jersey Central 5159	
	Northwest 76½	
	Northern Pacific	
	Ohio and Mississippi 16½	
	Pacific Mail	
	Outobollyon	
	Quicksilver	
	Rock Island and Pacific	
	St. Louis and Iron Mountain 2814	
	St. Louis Kansas City Northern 2336	
	Pref 58%	
	St. Louis and San Francisco 131/8	
	ref 18%	
	St. Paul	
	** Pref 95½	
	Sutro Tunnel	
	Union Pacific 783/a	
	Wabash 381/8	
	Wabash 381% Western Union Telegraph 23)%	
	2000	

#### GENERAL HARDWARE.

To use a familiar term, the General Hardware trade is fairly "booming," and the tone of the market in regard to values is

The demand for Nails has been very active since our last writing, and a good The stock market has been strong and at many fair-sized orders have been placed. We quote for wholesale lots, \$2.35, net, for tod. to 6od., and for small parcels 5 @ 10 cents per keg advance. A meeting of the Atlantic States Nail Association will be held in this city to-morrow (4th inst). It seems to be a foregone conclusion in the trade that a further advance will be adopted.

The Spoon manufacturers have advanced the price of Britannia Spoons to discount

65 per cent. The manufacturers of Vises, Picks, Mattocks, &c., held a meeting at the office of Hermann Boker & Co., in this city, on the 1st instant, when prices were advanced about 5 per cent.

Sargent & Co. have advanced the price of

Casters, as follows	
Page in	Discount
Catalogue.	per cent.
426, Plate Casters	4!
437, 40 01	45
428, French Pattern Casters	45
430, Shallow Socket "	43
430, Deep " " "	30
431. Piano Forte	45
431, Casters for Iron Bedsteads	45
433, Bed Casters	45
434 60 60	
435, Bracket Bed Caster	45
436, 60 60 00	
437:	
to per cent. discount for prompt cash.	*********
	10
The following circular explains itse	alf:

New York, September 1, 1879.

To the Trade: The undersigned, representing the manufacturers of Coes' Genuine Screw Wrenches, are instructed to state that an agreement has been entered into between their respective manufacturers by which their prices in future, or until fur-ther notice, will be identical. We are furthermore instructed to advise an advance in price of Genuine Screw Wrenches of either make to 65 per cent, discount from

Mechanics' Wrenches made by L. Coes & Co., and similar quality made by A. G. Coes & Co., will rate at 10 per cent. less than the Genuine. The foregoing to take effect from this date. All previous quotations are hereby withdrawn and annulled.

(Signed), HORACE DURKIE & CO.,

Agents for L. Coes & Co. GRAHAM & HAINES, Agents for A. G. Coes & Co.

The manufacturers of Horse and Mule Shoes have advanced prices 25 cents per keg. We quote from store: Horse Shoes, \$3.621/2; Mule Shoes, \$4.621/2. Their circu

lars we print below : [Circular and Price List, No. 2.] Office of the Rhode Island Horse Shos Co., PROVIDENCE, R. I., Sept. 1, 1879.

To the Trade: We take great pleasure in again offering you the several brands of Horse and Mule Shoes manufactured by us. Horse and Mule Shoes manufactured by us. The rapidly increasing demand from all sections of the country for these goods is a sufficient guarantee of the many superior qualities they possess. Thanking you for your patronage in the past, we hope, by strict attention both to the details of manufacture and to the wants of the trade, to merit a continuance of your favors. We are prepared to receive orders for our Horse and Mule Shoes upon the following

				Cts.	per	lb.,	cas
The Perki	ns Nev	Light Pa	ttern	Horse	Sho	e	. 3
4.6	6.6	Medium		6	8		
6 %	4.4	Heavy	6.6		6		. 3
Perkins S	now or	Trotting	Shoes	3			. 4
M	lule Sh	oes, Nos.	1 to 6.				4
AL T	ack Sh	nes					

The following discounts will be allowed on purchases made during the year: On lots of see kees

	" 1,000 " or less than 1,500, 3
	11 11 11 11 11 11 11 11 11 11 11 11 11
	" 1,500 " " " 2,000 4
	" 2,000 " or more 5
	A specification of sizes will be required
	when orders are accepted. Shipments will
	be promptly made in their turn. Terms of
	payment, cash in 30 days from date of in-
	voice. If unpaid, subject to sight draft
	without notice. We reserve the right to
	decline orders, also to advance prices at any
	time, except upon contracts made prior to
	such advance. Strikes of operatives, or
	suspension in case of fire, will relieve us
	from prompt fulfillment of contracts. Shoes
1	assorted as required. Please note reduction
	on Snow Shoes, being but a half cent ad-
1	vance on price of Horse Shoes, instead of

one cent, as heretofore,
Messrs. Horace Durrie & Co., 97 Chambers and 51 Reade streets, New York, will
continue to act as our agents, and they are
authorized to sell at all times at our lowest factory prices. A full assortment of our shoes we propose to keep in their store ready

for immediate delivery.
Rhode Island Horse Shoe Co.
F. W. Carpenter, president. [Circular No. 2, 1879.]

BURDEN IRON WORKS, TROY, N. Y., Sept. 1, 1879. We beg to inform you that our present rices and terms for Burden's Swaged Horse prices and terms for Burden's Swaged Horse and Mule Shoes of the latest improved pat-tern are as follows: For 100 kegs, in one order, Horse, 3½ cents per lb, cash: Mule, 4½ cents per lb, cash: Delivered free on board of cars or vessels here. Parties purchasing 500 kegs this year will be allowed 2 per cent. discount; 1000 kegs, 3 per cent. discount; 1500 kegs, 4 per cent. discount;

2000 kegs, or over, 5 per cent. discount.
Discount payable in January, 1880. A
specification of sizes to be furnished with each order. Orders will be executed in the order of their receipt. All payments to be made in eash only, within 30 days from date of invoice. only, within 30 days from date of invoice, We reserve the right to decline orders or to advance prices at any time, except upon orders entered prior to such advance. Strikes of operatives or any other unavoidable cause, will relieve us from prompt ful-

able cause, will reneve fillment of contracts.

H. Burden & Sons. [Circular No. 2, 1879.]

JUNIATA IRON WORKS, 4
PITTSBURGH, August 28th, 187). {
Gentlemen: We beg to inform you that
our present prices and terms for our improved Juniata Horse and Mule Shoes are as proved Juniata Horse and Mule Shoes are as follows; For 100 kegs in one order, Horse, 3½ cents per lb., cash; Mule, 4½ cents per lb., cash; Trotting or Snow, Roadster Pattern, 3¼ cents per lb., cash. Delivered free on boat or cars here. Parties purchasing 500 kegs between this date and January 1st, 1880, will be credited 2 per cent.; 1000 ditto, 3 per cent.; 1500 ditto, 4 per cent.; 2000 ditto, 5 per cent. Discount payable in January, 1880. Specifications of sizes to be furnished with each order. Orders to be filled in turn. Shoes packed to suit purchasers. We are now making all sizes and shapes of the celebrated Juniata Shoes, from the light No. I Mule to the heavy No. 8 the light No. I Mule to the heavy No. 8
Horse Shoes. The fine and perfectly proportioned crease; the clean punching, without bulging the outside edges; the extra quality of the Iron, which enables each Shoe quality of the Iron, which enables each Shoe to be bent double, either hot or cold, will recommend these Shoes to the trade to a greater extent than heretofore. The fact of these Shoes having been adopted by the U. S. government, after a careful inspection of all the different brands, and the largely increased inquiry and demand from the trade at large, justifies us in asking a portion of your orders. We remain yours truly your orders. We remain, yours truly, SHOENBERGER & CO.

The Stanley Works, New Britain, Conp. and No. 79 Chambers street, New York, announce an advance in the price of Wrought Butts from discount 60 and 10 and 5 per cent, to discount 60 and 5 per cent

The American Screw Company on the instant advanced the price of Coach Screws, in packages of 100 or less, to discount 60 per cent., and in kegs of 150 pounds to discount 65 per cent.

We have received the following : HARTFORD, September 1, 1879.
Destroy all former discount sheets. W

Boxwood Rules .... Ivory No. 1 Square and Bevels... WILLIS THRALL & SON.

Landers, Frary & Clark announced, under date of the 1st instant, an advance in the price of Stebbins' Molasses and Oil Gates to discount 60 and 10 per cent., formerly 62 1/2 and 10 per cent. ; and Brass Rackquote discount 45 per cent., instead of 50 er cent., as heretofore.

We have received the following circulars: Douglas Ax Manufacturing Co., | Boston, Sept. 1, 1879. DEAR SIRS: We have to advise you that

in consequence of an advance in all materials and labor we are compelled to advance the price of Axes 50 cents per dozen, to take effect on and after this date. Awaiting your favors, I am,

Yours respectfully, D. D. DANA, Treas.

Office of The J. L. Mott Iron Works, ) 85 and 95 Beekman street, New York, Aug. 27, 1879. GENTLEMEN: On and after this date our discount on all

der and Trap Moulds, Boiler Stands and Charcoal Furnaces (Plain, Galvan'zed and Enameledt, will be wash Basins, Closet Bowls, Hoppers and Hopper Traps (Plain, Galvanized and Enameled). 25 Sectional, Corner and Half-Circle Urinals (Plain, Galvanized and Enameled). 15 Cast Iron Pipe, all sizes. 25 Cast Iron Pipe, all sizes. 30

On all other goods not enumerated above the discount is unchanged. Respectfully,
The J. L. Mott Iron Works.
N. B.—All special rates withdrawn.

The Union Mfg. Co. have changed the discount on Loose Pin Butts, with Plated Tips, Nos. 65 and 92, to 70 and 10 per cent. Fernald & Sise, No. 100 Chambers street, illustrate in their advertisement on page 7, a

attention is invited. The goods are well made and finished, and are quoted at \$8 per dozen, subject to 35 per cent. discount The United States Stamping Co., Nos. 58 and 60 Beekman street, in an advertisement on the 26th page, notify the trade in the matter of a legal decision sustaining their patent for Self-Righting Cuspadores. They say, "All parties manufacturing or

selling Self-Righting Cuspadores, not made

G. W. Storer, manufacturer of Hancock Inspirators, &c., has removed from No. 132 to No. 140 North Third street, Philadelphia. The notice of removal reached us too late to change the address in his advertisement, which appears on another page.

John C. Parkes, Hardware merchant, Dublin, Ireland, has had printed for him by J. B. Lippincott & Co., of Philadelphia, an illustrated catalogue and price list of American Hardware, Edge Tools, Pumps, Agricultural Implements, Woodenware, &c., imported by him. The book is very handsomely arranged and printed. It contains 144 pages. Among the goods shown we notice a fine assortment of Henry Disston & Sons' Saws, Saw Sets and other Tools; the Stanley Rule and Level Company's Rules, Levels, Planes, &c.; a good assortment of Cast-Steel Hammers, Axes, Hatchets, Bit Braces, Brick and Plastering Trowels, Tool Chests, American Screw Company's Wood Screws, Locks and Bronze Hardware by the Russell & Erwin Manufacturing Company, Sherwood's Bright Wire Goods, Silver-Plated Ware, Bird Cages, Fairbanks' Scales, W. & B. Douglas's Pumps, Garden Engines, &c.; Sad Irons, Lawn Mowers, Cast Steel Forks, Shovels and Spades, and a great variety of House-Furnishing Goods, Woodenware, &c.

#### TRON.

American Pig.-The market for raw Irons is in much the same condition reported last week. The demand continues to be far in excess of the visible supply, and prices are still hardening. We hear rumors of large transactions, some at higher figures than current quotations, but are unable to trace them. Gray Forge Iron is in particularly active request, but there is little offering, except for future delivery, at prices ruling date of shipment. We quote : Foundry No. 1, \$22 @ \$23; Foundry No. 2, \$21 @ \$22; Gray Forge, \$20 @ \$21.

Scotch Pig.-Some 2200 tons of Scotch Iron arrived at this port during the week, nearly all of which was previously sold. We note sale of 1000 tons Glengarnock at \$22, to arrive. Freight; from Glasgow are stiff, with upward tendency. We quote Eglinton, \$21 @ \$21.50; Coltness, \$23.50; Glengarnock, \$22, and Gartsherrie, \$22 50.

Rails.-There is nothing to report in the way of transactions either in Steel or Iron Rails, so far as this market is concerned. We quote Steel, \$49 @ \$50, and Iron, \$40 @

Old Rails .- The inquiry for Old Rails is ctive, but the offerings are very light. No sales worthy of mention have come to inally, \$26@\$27.50.

Scrap. - We quote vard, \$25.50 @ \$26.

#### METALS.

Copper.-Sales for the week have been confined to 50,000 lbs. Lake Superior at 16 1/4 @ 16 1/4, and the market remains quiet at the close at this figure, which is also the nominal value of Baltimore. Advices and from the manufacturing regions are encouraging, a fair amount of activity prevailing Accounts from Europe are less favorable, and stocks continue to accumulate in England. There is consequently some danger of a collapse in values there, and if such a break down should occur, our market could hardly escape being adversely afing, Boiler, Liquor and Bibb Cocks, &c., they fected. The news from the West Coast presents no features having any bearing on Copper. We have received mail advices from London to the 23d ult., reading as folexperienced by the holders of Copper in the announcement of heavy charters from Chilifor the first half of August, there being no less than 3200 tons, which would have been ample for the whole month, and therefore is just about double the quantity of what was wanted. Holders have been blindly building up their hopes upon light charters, but they are now beginning to get utterly disgusted with such overwhelming supplies." There is a moderate, but steady, demand for manufactured Copper at the combination prices. We quote: New Sheathing Copper, 22¢; Braziers, 24¢; and Bolts, 24¢; Bottoms, 26¢; American Yellow Sheathing Metal, 13½¢; Yellow Metal Bolts, 20¢; and

English Yellow Sheathing Metal, 126 @ 12146,

Tin.—The foreign markets are again higher, and this, coupled with a good jobbing demand, has caused our own market to advance still further. We quote large lots, on the spot, as follows: Straits, 164¢; English, Cemmon, 15½¢, and Banca, 10¢, closing with great firmness. The arrivals since our last report have been 5600 slabs Straits and 500 slabs Banca. The deliveries in Europe continue satisfactory, having been in Augcontinue satisfactory, having been in August 1900 tons in England and Holland, while shipments from the producing countries are moderate—say for August to England from Australia 400 tons, and from Singapore 120 tons, and to the United States from Singapore and Penang 460 tons. London has adnew pattern "Horse Shoe Padlock," to which anced to £71 for Straits, and Singapore to vanced to £71 for Straits, and Singapore to \$21.25 @ \$21.50 per picul; Exchange, 3/9 ¼.

"London, August 23.—On the whole, this market has remained tolerably steady throughout the week. On Monday it opened very firm, and prices for foreign advanced to £68. 10/, but subsequently a slight reaction occurred, and sellers displayed less to 55. 10/, but subsequently a signt reaction occurred, and sellery displayed less firmness, and sales have been made chiefly at £68 (£68, 5/, though it is reported that as low as £67. 15/ has been accepted. The principal of the stock being concentrated in a few hands frequently renders it difficult to effect purchases, especially when the least inquiry exists."

Tin Plates continue firm and in steady demand. We quote large lines, ordinary brands, ½ box: Charcoal Bright, \$6 (@ \$6.37½; ditto Ternes, \$5.75 (@ \$5.87½; Coke Tin, \$5.20 (@ \$5.25; and ditto Ternes, \$5 (@ \$5.12½. It will be remembered that the 1st instant had been decided upon by makers as the date upon which the reduction of wages was to take place. We now learn by cable that the makers of the Tin Plate known as Melyn grade (comprising five works), except P. S. & Co., have actually closed their establishments. Other makers, however, have met the demands of the men by withdrawing the notices of reduction. A recent telegram, also announces. by our company, will be prosecuted forthby withdrawing the notices of reduction. recent telegram also announces that the makers of R. G. (Messrs, Barker & Co., of Cardiff) have absolutely closed in bankruptcy, so that their product will be entirely out of the market.

Lead.—This metal is reported quite firm at 4.05\$\psi\$ @ 4\forall \psi \psi\$, at which figure jobbing cales are being made. The market closes quiet. Refined is held at 4.15\$\psi\$ @ 4\forall \psi\$. A private telegram has been received from Europe raising the selling figure materially, which would imply some fresh improvement over there. "London, Aug. 23: This metal has still further advanced in value, and sel has still further advanced in value, and sellers are firm at the increased rate; nevertheless, the demand is quiet, as the wants of buyers continue limited." Manufacturers' prices are unchanged. We quote: Bar, 5¢; Pipe, 5½¢; Sheet, 6¢; Tin-lined Pipe, 12¢; No. 1 Solder, 10¢, all less 10 % to tha trade.

Spelter and Zinc .- We hear that a sale 50 tons Common Spelter has been effected  $5\frac{14}{9}$ , and that since it has become eviat that none of the Western smelters can deliver any Spetter during the present month, holders are confident of realizing the present asking price of 6¢ for the limited stock on hand. "London, August 23.—The market for this metal is very firm, and £18 P ton has been paid for Silesian brands. It is fully expected by sellers that the ader to has been paid for Shesian brands. It is fully expected by sellers that the advanced rate will be maintained throughout the autumn. There is not much doing in hard and prices keep nominal." American Sheet Zinc is now worth 7½ © 7¾¢.

Nickel.-No change can be reported. We uote the same as heretofore, \$1.25.

Antimony.—A moderate demand has revailed at 12¢ @ 12¼¢, according to

#### COAL.

The state of the market during the past veek has been anything but encouraging. Naturally, a combination which shall control prices or curtail the amount of Coal shipped, sone of the first things which is suggested to the minds of Coal men. It is impossible to make any one connected with the Coal trade understand that no amount of combining to restrict production or raise prices, can give more than a very temporary relief. They our notice during the week. We quote nom- point with pride to the fact that for a single year at a time the market was influenced to a ery considerable degree, and prices were much better than they were afterward. They ask if this can be done for one year, why can it not be done for several years in succession. As they look at the matter, there is no reason why the thing cannot be done, and they are of course very ready to promote any movement looking toward a combination. At the present time prices have fallen so low and the market is in such an exceedingly bad condition that, in spite of some bad feeling on the subject, growing out of present competition and former combinations, the leading men have begun taking steps in the matter of forming a new com-bination. For some time past the cutting of prices, the struggle for new markets and a reneral coal war has been going on in a quiet way. The Philadelphia and Reading quiet way. The Philadelphia and Reading Railroad, however, have had one market of which they held a practical monopoly, and in which they obtained prices that gave them a high profit. Secure in this, they have been able to enter other markets to much better advantage than they could have done had all their markets lows: "Another disappointment has been been competing points. Recently, however, the Delware and Hudson Canal Company

The last is to be secured by a method of pooling the total output. This seems to place Mr. Gowen in the position of being willing to accept almost any plan that may be proposed, provided it includes a pro rata distribution of the tonnage. As his company will not in any event suffer by such a distribution, it is very natural that he should This plan, however, does not suit favor it. the Lehigh Valley people, who on account of the peculiar character of their demand, feel the effect of a pro rata distribution much more than any of the other companies. Various other interests are opposed to this method of restricting the output, and wish to have the tonnage restricted by means of a series of stoppages. On the 1st of September, President Dickson, of the Dela ware and Hudson Canal Company, wrote a letter to Judge Lathrop, stating his views in regard to the trade. This letter relates chiefly to the accumulation of unfilled orders at low prices. After these have been filled prices are to be advanced, and some steps taken to do the one thing which he thinks will remedy the whole trouble, and that is to restrict the tonnage. The whole of the difficulty in forming a combination is found in the fact that each company, as a matter of self-preservation, must needs cut its neighbors' throats. No amount of combination or agreement can alter this so long as the productive capacity is greater than the consumption. That something will be done is very probable, but it is safe to say that the unsettled condition of this trade must continue until the consumption of Coal in this country has largely increased.

Prices are naturally greatly demoralized and the trade is very dull. In general the dealers appear to be waiting to see the result of the fight. We omit quotations. They are, at the present moment, of no value. Even an actual selling price could not be depended upon at the present time as representing the market.

#### IMPORTS

Of Hardware, Iron, Steel and Metals into the Port of New York, for the Week ending Sept. 9, 1879 :

Pig, tons, aco
Latasa D. F.
Ore, tons, aco
Latasa D. F.
Ore, tons, aco
Lee, James & Co.
Pig, tons, 351
Lundberg Gustaf,
Bundles, 377
Bdls, and bars, 772
Lundbell Chas. Ge.
Bars. Ges.

Lundell Chas. G.
Bars., 703
Marvel Wm. D.
Ore, tons, 1476
McCoy & Co.
Bundles, 1360
Milliken & Smith,
Wire rods, bdls., 658
Moore's J. P. Sons.
Bars., 86
Bundles, 117
Naylor & Co.
So'releisen, tons, 100

Hardware. Alexander F. & Son, Hdw., cs., 25 Ansonia Clock Co., Mdse., pkge., <sup>1</sup> Bloomfield J. C., Hdw., pkgs., <sup>103</sup> Hdw., pcs., <sup>8</sup> Boker, Hermann & Co.

Boker, Hermann & Hdw., cs., 57 Hdw., csks., 6 Bradley Walter S. Machinery, cs. Bradley Walter S.
Machinery, cs., 4
Brown Bros. & Co.
Wire, colls. 250
Carey S.
Grinding stones,
blocks, 8
Collins & Co.
Hdw., csks., 2
De Cordova G.
Hdw., box, 1
Folsom H. & D.
Mdse., pkgs., 8
Arms, cs., 6
Herrman H. & Co.
Mdse., pkgs., 42

Naylor & Co.

Sp geleisen, tons, 500

Novada Bank, of San

Francisco,
Pig, tons, 148

Perkins, Livingstone,
Post & Co.

Sp geleisen, tons, 100

Spigeleisen, cs., 500

Sanderson & Son,
Old shaft Iron, pes., 5
Old plates, 2

Loose scrap, a quantity
Seligmann, J. & W.

Rails, 4067 Mdse., pkgs., 47 sher, Whitman & Co Lesher, White, Hdw., case, 1 Hdw., case, 1 ton W. & F. Livingston W. & F. Grinding stone Maine Belt Sugar lachinery, cs., glachinery, pkgs. n J. W. & Co.

Machinery, pkgs., 40
Mason J. W. & Co.
Wire rope, coils, 2
McCoy & Co.
Mdse., pkgs., 3
Hdw., cs., 4
Razors, case, 1
Pulley blocks, cks., 3
Merchanta' Dispatch Co.
Castridges, Cs., 6

Pulley blocks,
Merchants' Dispatch Co
Cartridges, cs., 6
Gun caps, cs., 5
Arms, cs., 25
Meriden Britannia Co.
Mdse., pkgs., 2
Moore's J. P. Sons,
Guns, cs., 4
Ovelton & Gs.
Guns, cs., 2
Owen A.
Arms, cs., 8
Perkins & Co.
Coal, tons, 451
Rogers H.
Mdse., pkgs., 4
Roggeviller Ed.
Machinery, cs., 4
Schoverling, Daly
Giales,

Schoverling, Daly Gales, Mdse., pkgs., 8 Arms, cs., 11 Hdw., cs., 9 Schuyler, Hartley Schuyler, Hartle Graham. Mdse., pkgs., 4 Sellers Wm. B., Jr.

Mdse., pkgs , s Struller, Lau & Co Gun caps, cls., 31
Hdw., cs., 2
Taylor Thes.
Cutlery. csk., 1
Hdw., css., 2
Thompson C. W.
Iron wire, csks., 3
Varney & Doe,
Gun caps, cs., 4

Varney & Doe, Gun caps, cs., 4 Vom Cleff & Co. Ironware, cs., 10 Wetzlar, M. Mdse., pkge., 1 Wiebusch & Hilger Hdw. Co. Cutlery and hdw., caks. 11 Caks., 11
Winchester Repeating
Arms Co.
Arms, Cs., 1
Witte J. G. & Bro.

Witte J. G. & Bro.
Knives, cs., 33
Wolff, H. & Co.
Mdsc., pkgs, 9
Wolff B. H. & Co.
Gun barrels, cs., 6
Order,
Anvils, 146
Arms, cs., 18
Cannel coal, tons,

969 Cutlery, cs., 4 Files, csks., 2 Guns, cs., 6 Hdw., bales, 9 Hdw., bdls., 408 Hdw., cs., 117 Hdw., pkgs., 13 Iron cott'n ties,bdls.,

1600 Iron vases, cs., 2 Nails, csks., 2 Orrel coal, tons, Wire, bdls., 512

Black tag'rs, bxs., 60
Willetts & Heinlen,
Yel, metal, cs., 120 Order Iron. Albany and Rensselaer Iron and Steel Co. Iron and Steel Co.
Sp'geleisen, tons, 300
Brockholme Wm.
Metal, pcs., 48
Crocker & Co.
Pig, tons, 220
Elliott, 50n & Co.
Ore, tons, 200
Henderson Bros.
Pig, tons, 200

EXPORTS

Of Hardware, Iron, Machinery, Metals, &c., from the Port of New York, for the Week ending September 2, 1879;

New Zealand. Stettin. Quaz. Value.

Mf. iron, pkgs 1 300

Pltdware, cs. 2 413

Hdw., case . . . 1 12 Quan. Value. Ptlm., gals. 149,640\$12,900 Stockholm. Ptlm., gals. .98,367 8,852 Marseilles. Ptlm., gals...71,000 3,750 Elsinore. Ptlm., gals.137,159 10,000 Havre. oil, gals. 967 Copenhagen. Cutlery, cs... 4
Ag. imp., pkgs 8
Hdw., pkgs... 1
Mach. oil,gals\_1124
Silverware, cs... 1
Sew. mach, cs... 24
Mach'y, pkgs... 6

Cette.

Cadia

Cuba.

Porto Rico.

Oporto.

Ptlm. gals. 109,202 7,450

Tricate.

Ptlm., gals.283,512 19.810

Odessa.

Ptlm., gals.241,750 28,006

Salonica.

Ptlm., gals. .90,500 7,919

Alexandria.

Ptlm., gals.272,500 27,900

Port Sald.

Hayti.

Mexico.

Tin, bxs..... Shot, kegs... Metal, cs....

Metal, cs. Iron, pkgs... Hdw., pkgs... Glassw'e, pgs Nails, kegs... Cartridges, cs Grindstones... Tinware, cs... Notions. cs...

Notions, cs... r Mach'y, pkgs. 3r Mf. iron, pkgs. 49 Ptlm., gals. 30,700 Powder, lbs...2000 Cutlery, cs... ra Sew. mach., cs. 126 Pistols, cs... 2

United States of Co-lombia.

Powder, lbs..5316 1,641 Shot, pkgs... 10 72 Sew. mach., cs 194 4,466 Glassw'e, pgs. 18 285 Cartridges, cs. 11 194

S. w. appr. pgs Notions, cs...

S. w. appr. pgs 7
Notions, cs... 5
Guns, cs... 3
Mach. oil, gals 496
Wire, pkgs ... 107
Hdw. pkgs ... 107
Hdw. pkgs ... 107
Ptlm, gals .. 16, 43
Coal, tons ... 10
Revolvers, cs. 8
Cutlery, pkgs 44
Mf. iron, pkgs 444
Mf. iron, pkgs 444
Mf. iron, pkgs 445
Mf. iron, pkgs 445
Mf. iron, pkgs 445
Mf. iron, pkgs ... 13
Nails, kegs ... 33
Tinware, cs... 5
Zinc, caak ... 1
Iron, pkgs ... 11
Mach Y, pkgs ... 19
Car fixt, cs... 1
Gristones, pgs 11

Venezuela.

Brazil.

Ptlm., gals., 58, 259

Ptlm. gals. :5, 259
Hdw., pkgs ... 364
Mf. iron, pkgs ... 35
Pumps, pkgs ... 2
Irons, cs. ... 32
Shoe nails, cs. 14
Sew. mach. cs. 39
Car wheels. ... 30
Glassw'e, pgs, 31
Mach'y, pkgs. 10
A; imp., pgs. 14
Cutlery, cs. ... 43
Nails, kegs. ... 66

China.

Japan.

Ptlm. gals..653,000 Slates, cs.... 503 Scales, cs.... 33 Mf. iron, pkgs 11

Ptlm., gals..23,681 Sew. mach., cs 10

rtim., gais...2, Sew. mach., cs Arms, cs.... Tinware, cs.. Revolvers, cs.. Mf. iron, pkgs Pltdware, cs.. Hdw., pkgs... Nails, kegs... Ag. imp., pks

194 18 11

194

6,230

z,457 z,858

713

Ptlm., gals.111,035

Ptlm., gals. 37,000 Hdw., cs. 19

Ptlm., gals.215,992 14,039 Danish West Indies. Nails, kegs... 38 111 Glassw'e, pgs. 12 51 Ptlm., gals... 400 38 Hdw., pkgs... 11 97 Mf. iron, pkgs 13 70 Hamburg.

Ptim., gals.798,872 54,550 Mf. iron, pkgs 6 88 Sew. mach., cs 6 88 Sew. mach., cs Mach'y, pkgs. Bullets, bxs.. Tinware, cs... Burners, cs... Guns, cs... Cuba.

R. R. mtl., pgs 33
Mach. oil, gals 250
Hdw., pkgs... 41
Plbrs. mtl.pgs 18
Scales, pkgs... 69
Ag. imp., pkgs 6
Mach'y, pkge. 13
Belting, bales. 4
Mf. iron, pkgs 6
Glassw'e, pkgs 10 320 825 Belting, cs.... 6
Hdw., pkgs... 87
Silverware, cs... 1
Ag. imp., pkge 6 3,218 343 Bremen.

Ptlm., gls. 1, 116,865 79,590 Sew. mach., cs 108 2,400 Ag. imp., cs.. 5 Hdw., pkgs... 12 Lub. oil, gals.. 762 Hdw., pkgs... 77 Sew. mach, cs 9 Nais, pags. 78
Sew. mach, cs 9
Nails, kegs. ... 205
Chandelier, cs r
Pitdware, pgs 4
Ptim., gais. 10, 503
Mf. iron, pkgs 4
Glasswe, pgs 27
Beiting, baie. r Lubeck. Ptlm., gals..83,490 6,890 Rotterdam.

Ag. imp., pkgs 4 350
Slates, cs.... 115 434
Lub. cr'm, kgs 45 1,791
Lub. oil, galis. 4922 1,080
Glassw'e, cs... 2 1,080
Glassw'e, cs... 2 514
Hdw., pkgs... 19 644
Mach'y., pkgs 12 685 Dutch East Indies. Ptlm., gals. 172,500 18,000

Antworp. Ptlm., gals.,789,725 52,896 Pl'td ware, cs 1 150 Sew. mach., cs 21 1,000 Slates, cs... 131 511 Hdw., pkgs... 11 266 Bristol.

Slates, cs. ... 10 36 Ptlm., gals.270,111 20,257 Ptim., gals. 110,000 9,900 Hull. Belting, cs.... 4 869 Slates, cs... 6 30 Hdw., pkgs... 15 421 Scales, pkgs... 65 841 Ag. imp., pkgs 10 1,675 Belting, cs.... 4 Iron safe.... 1
Ptim., gals...1600
Cartridges, cs. 4
Revolvers, cs. 1
Sew. mach., cs. 2 Glasgow.

Hdw., pkgs. 13 Mach'y, pkgs. 8 Iron rolls, cs. 1 Ox. zinc, bbis 10 Belting, cs. 41 257 2,000 50 50 ### Line | Line Liverpool.

London. . 619 2,349 14 758

Canada,

Sheet iron,pgs 19 361 Glassw're, cs. 6 191

British North American Colonies.

Ptlm., gal....6500 Slate, tons... 53 Gl'ssw're, pgs 105 Iron ore, tons 19 Coal, tons... 259 Mf. iron, pkgs 13

Seligmann, J. & W.
Rails, 4067
Stikeman J.
Cast iron, ca., 4
Straeburger, Pfeiffer & C.
Co.
Sheet iron, pkgs., Slates, cs. . . . . 612 3,349
Mach'y, pkgs. 14 758
Hdw., pkgs. . . 74 1,939
Glassw'e, pgs. 184 3,465
Pltdware, pgs 3 45
Pltm., gala. . 84,370,7,601
Sew. mach., cs. 86 2,223
Ag. imp., pkgs 7 61
Pumps, pkgs 6 316 Waite E. J. & Co. Ore, tons, 1800 Williamson J. & Co. Pig, tons, 300 Queenstown. Ptlm., gals.454,657 22,733 Dublin.

Pig, tons, 300
Order,
Hoop iron, bdls., 1350
Old iron, pcs., 1837
Old radis, tons, 1300
Ore, tons, 1661
Pig, tons, 1499½
Plates, 13
Rails, pcs., 7463
Serap, bxs., 240
Serap, bxs., 240
Serap, tons, 593
Spiegeleisen, kilos.,
402,000
Spiegeleisen, tons,
1371 Ptlm., gals.139,766 9,765 Limerick. Ptlm., gals.249,411 18,082 Gibraltar.Ptlm., gals. 140,000 12,600 Pumps, pkgs. 5 100 1571

Steel. Brown Wm. Bundles, 177 Cask, 1 Cases, 27 Woodford W. O. Bars, 50 Bundles, 204 Cases, 7 ler, Bars, 24 Bundles, 193

Block tin, bbls.. 5 Lead, pigs. 349 Lead, tons. 25 Manganese, tons. 36 Spelter, plates. 2532 Tin, ingots, 1800 Tin plates, bxs., 13,-

647 Tin, slabs. 5457

British West Indies. Glasswe, pgs. 17 Cases, z6 Cases, 37 Glassw'e, pgs. 55 411
Mach'y, cs. 7 2,287
Nails, kegs. 81 252
Pitdware, cs. 15 1,200
Slate, tons. 23 450 Metals. Brown Bros. & Co. Brown Bros. & Co.
Tin, ingots, 246
Tin, slabs, 1317
Bruce & Cook,
Tin and terne plates,
bxs., 1150
Byrne Jos. & Co. w. appr.pgs evolvers, cs. Revolvers, cs. Ptlm., gals. 25, Mf. iron, pkgs Hdw., pkgs... Ag. imp., pkgs 10

Byrne Jos. & Co.
Tin plates, bxs., 57a7
Cort A. L. & Co.
Tin plates, bxs., 357
Dale John G.
Tin plates, bxs., 657
De Rivera J. & Co.
Copper, tcs., 45
Lamarche, H.
Rolled zinc, csks., 30
Montell F. T. & Sons,
Old brass, csks., 13
Old brass, bbls., 11
Old copper, bbl., 1
Naylor & Co.
Tin plates, bxs., 15, British East Indies. Ptlm., gals.477,370 48,930 British Guiana. Ptlm., gals...500 455 Pumps, pkgs. 3 Nalis, kegs... 408 Hdw., pkgs... 438 G530 Md. iron, pgs. 13 Glassw'e, pgs. 74 1,365 Erass g'ds, cs 56 Hdw , pkgs... 438 6,539 Glassw'e, pgs. 74 1,365 Slates, cs.... 53 189 Pltd.ware,pgs 35 4,780 Netherland Trading Co. Slate, pcs..38,000 240 Lub. oil, gals 3000 1,340 Sew. mach., cs 11 674 Tin, blocks, 500
Nevada Bank, of San
Francisco,
Tin, ingots, 1200
Block tin, csks., 20
Tin plates, bxs., 1238
Black taggers, bxs., Lub. oil, gals 3000 1,340 Sew. mach., cs 11 674 Ag. imp., pkgs 27 130 Ptim., gals. 106,830 11,569 Mf. iron, pkgs 35 65; Pumps, pkgs. 13 990 Nails, kegs... 265 830 Phelps, Dodge & Co. Tin plates, bxs., 18,-

Glassw'e, pgs 87 884
Pttdware, cs. . 3 72
Ptlm., gals...17,248 1,730
Tinware, cs. . 2 40
Sew. mach. cs 2 30

Copper, heavy Copper Botton Yellow Metal. Brass, heavy..... Brass, light ...... Composition, heavy Cead, solid. Tea Lead ... Pewter, No. 1. Pewter, No. 2. Wrought Iron 9599995 pr. cwt The prices current for Rags, &c., are as 

No. 2
Seconds...
No. 2
Seconds...
Mixed, Woolen
Soft, do...
Mixed Rags
Gunny Jagging
Jute butts...
Kentucky bagging
Book Stock...
Newspapers
Waste Paper and Scraps...
Kentucky Bale Rope
Tarred Shaking
Grass Rope PHILADELPHIA.

Office of The Iron Age, 220 South Fourth St. PHILADBLPHIA, September 2, 1879. Pig Iron.—The market still shows an advancing tendency, and we hear of sales at higher prices than any hitherto quoted. It is singular what becomes of all the iron; the furnaces appear to dispose of their product more as a matter of favor than of business and buyers have to make frequent applica-tions before they can find any one willing to name a price, particularly if the quantity asked for is of any importance. It seems impossible that all the Iron has so quickly gone into consumption, but it has disappeard, and can only be accounted for on the ground that consumers are carrying heavier stocks in their yards than formerly. This theory is in a measure upset, from the fact that the furnaces are pushed with a con-stant demand for immediate delivery, from which it may be inferred that stocks are exhausted. A similar anomaly has been frequently noted on a declining market, when consumers appear to have inexhaustible sup-plies, and scarcely any inducement could be offered sufficient to lead to a new purchase. offered sufficient to lead to a new purchase. By the same rule nobody has any Iron now, and everybody is wanting it. We have therefore to quote the market as we find it, viz., scarcity of supplies, with an increasing demand from buyers for every description of Iron, and at steadily advancing prices. Predictions in regard to the future are entirely out of the question, but for the present the tendency is steadily upward, with no signs whatever of a retrograde movement. One of the leading importing houses informs us that their English correspondents report that sales of Pig Metal for American account reach 100,000 tons, but not more than half\_the quantity can be traced on this side. Transactions have been very important, however. We quote: No. traced on this side. Transactions have been very important, however. We quote: No. 1, \$21.50 @ \$22.50; No. 2, \$20 @ \$21; Gray Forge, \$18.50 @ \$20; Mottled, \$17.50 @ \$18; White, \$16 @ \$16.50; Hot-Blast Charcoal, \$25 @ \$28; Cold-Blast Charcoal,

\$32 @ \$35. Muck Bars.—Prices are again higher, and sales have been made at prices varying from \$35 @ \$36, with a continued active demand at steadily advancing figures. Holders are asking \$37, and it is likely that sales could be promptly effected at about \$36 or even a hade higher.

Blooms - Are in more active demand, and under limited supplies, prices are firm as follows: Sunken Scrap Blooms (2464 lb), \$39 @ \$40; Northern Ore Blooms (2240 lb), \$34 @ \$38; best quality Charcoal Billets (2240 lb), for wire and steel purposes, \$59 @ \$61; Bars, do., \$63.50 @ \$66; Sheet Iron Blooms, cornered (2464 lb), \$54 @ \$56; Cold-blast Charcoal Plate Blooms, \$53 @ \$55; run-out Anthracite \$46 @ \$48 50 thracite, \$46 @ \$48.50.
Finished Iron.—The change in the con-

dition of business is almost marvelous. A little while ago gloom and depression over-shadowed everything, and the most sanguine men appear to have had but a faint idea of what was in store for them. Still history repeats itself, and in the Iron trade will no doubt go on repeating itself. Inflation after dopression; depression after inflation. A careful survey of the field, however, gives some idea why the depression continued so long, and why the movement should now careful survey of the field, however, gives some idea why the depression continued so long, and why the movement should now be as general and sustained as it appears to be. While prices were declining dealers and consumers got into the helpit ers and consumers got into the habit of buying small quantities at a until finally stocks were reduced mere nothing. This policy gave good results until bottom was touched, but such an unusual restriction of business only added to the depression, the ramification of the Iron trade being very far reaching in its ef-fects. Without going into details, it is well known that not only was there no apparent inducement for manufacturers to make improvements in their plant, but many mills have been neglected and abandoned, and in-stead of increasing the capacity for production, it has been rather decreased. The country has been growing, however, during all these years of depression; agriculture, Ptlm., gals.262,500 25,250 Coal. tons.... 50 123 especially, has been greatly stimulated, and low comes the demand for facilities for transportation, new roads, new equipments. bridges, implements, machinery — every thing, in fact, seems to be wanted at once oo,340 As mentations, 1,713 state stumbering the while, and it is found that the capacity for production is not nearly equal to meeting the increased demand upon it. This is felt the more because every the state of the state o As mentioned, the Iron trade has French West Indies.

such demand being made upon them. Un- the close of the year; hence it is not stranger see no reason why the trade should not have long period of prosperity.

Structural Iron.-Under continued active demand prices are higher, with indications of a very active market during the next three months. We quote: Angles, 2.5¢; Tees, 2.9¢ @ 3¢; Beams and Channels, 3¢ @ 3.2¢.

Plate and Tank Iron.—The demand is again urgent, and prices show a decided advance since last week. The following quotations give a fair indication of the market, but it is uncertain whether manufacturers 2.3¢ @ 2.5¢; Sheared, 2.5¢ @ 2.6¢; Common Plate, 2.7¢; Tank and C. No. 1, 2.8¢ @ 3¢; C. H. No. 1, 3¢ @ 3.2¢; Flange Iron, 4.2¢@ 4.5¢; Solid Fire-box and Best Bloom, 5.5¢@ 6¢.

Sheet Iron.-The market continues ac Sheet Iron.—The market continues active and excited, the majority of orders being for larger quantities than manufacturers can at present accept. Prices are still advancing, and we add I.Io¢ to our figures of last week, and even then orders can not be placed except in a moderate way. We quote: Common Sheet, No. 20 to 23, 3.4¢ @ 3.5¢; No. 24 to 28, 3.6¢ @ 3.7¢; Best Refined Sheet, No. 25 to 28, 3.9¢ @ 4¢; No. 16 to 24, 3.6¢ @ 3.7¢; Best Bloom Sheets, No. 16 to 24, 5.7¢ @ 5.9¢; No. 25 to 28, 6¢ @ 6.1¢; Refined Plates or Blue Angles of the state nealed, 5-16 to 16, 2.8¢ @ 3¢; Best Bloom, 5-16 to 16, 5.6¢ @ 5.8¢; A Patent Planished, 10½¢; B Patent Planished, 9½¢; Best Blooms, Galvanized, 40 % discount; second quality, 50 %.

Bar Iron.—The condition of the Bar trade shows very little change, but the stiffening process continues, and it would be more difficult to place an order to-day than it was a week ago. We understand that 2.3¢ is the nominal quotation, but it is not easy for a buyer to place an order even at that figure, which, in fact, is too low to leave a fair margin for the manufacturer.

Steel Rails .- A considerable amount of business has been done for deliveries in 1880, and we have reason to believe that \$50 has been about an average figure in recent transactions. The increase in cost of production, present and prospective, compels manufacturers to demand prices to cover risks, and as buyers are very urgent, full quotations have been obtained, understood to be \$50 at

Iron Rails,-There is but little change to report in the Iron Rail trade, as manufac turers have all they can do at present, and buyers are not prepared to pay much higher figures than are now current. Sales during figures than are now current. Sales during the week have been made at \$41 at mill for heavy sections, \$42 for 35's, and \$42 for foreign rails, cost, freight and insurance. There is every indication of the demand continuing for some time, but it is not likely that prices can go much higher at present.

Old Rails,-The market shows no impor tant change, although prices are still stiffen-ing, and \$26.75 @ \$27 has been paid for spot lots. The feeling is becoming stronger that prices are dangerously high, and have been forced up owing to the non-arrival of lots bought against contracts entered into by manufacturers some time ago. Large lots are on the way here, and as soon as they begin to arrive a sharp reaction may be expected. So long as the necessities of buyers are urgent, they will take Rails on the best terms they can make; but there is no doubt that leading consumers have ample supplies on the way, which may arrive at any moment. The demand, therefore, is said to be of an exceptional character, and likely to be out to temporary at present forms. be quite temporary at present figures. Sales during the week have been made at \$26.50 @ \$26.75 and \$27, which price is now asked for spot lots.

Scrap Iron.—The demand is fully maintained, but prices are unchanged and firm, Cast being worth \$14.50 @ \$16, and Wrought, \$25 @ \$26, as to quality.

#### PITTSBURGH.

Office of The Iron Age, 77 Fourth Avenue, PITTSBURGH, PA., September 2, 1879.

The month just closed has been an event-ful one in the history of the Iron business of the West, Pittsburgh in particular. The vol-ume of business was the largest perhaps that was ever transacted in a single month be-fore, and the advance in price almost as rapid as during the war times, when infla-tion was the order of the day. A good deal has been said about the advance having been too rapid to be maintained, and that it will lead to overproduction, as well as impo tion of foreign iron; but it is well to bear in mind that some of those who are so much concerned about the price of iron, the raw article in particular, are "bears," have contracts made possibly prior to the advance, and did not, as they should have done, cover their sales. There may be an overproduction after a while, but there is no getng over the fact that there is a scarcity both of the raw article and products at the present time.

Pumps, pigs. 13
Ogo Glasswe, pgs 87
Nalls, kegs... 265
Grindstas, pgs 130
Mach'y, pkgs. 3
Slate, bxs... 44
OLD METALS, PAPER STOCK, &c.

In the Old Metal market this week was note a sudden rise in Machinery and Light fron, and a slight advance in Heavy Brass somewhat healthier, but no other changes in values are reported. The condition of the Rag and Paper Stock market continues good, but prices remain unchanged.

The purchasing prices offered by dealers for Old Metals are 4s follows:

Old Metals are Pig Iron.-While there has been a de-

such demand being made upon them. Unquestionably there is an enormous demand for legitimate purposes, and every prospect of its continuance for some time to come, but there is a good deal of the same feeling which is shown during a run on a bank—as soon as it is shown that the demand can be soon as it is shown that the demand can be soon as it is shown that the demand can be soon as it is shown that the demand can be soon as it is shown that the demand can be soon as it is shown that the demand can be soon as it is shown that the demand can be supprising that they are judifferent above. which is shown during a run on a bank—as soon as it is shown that the demand can be met the panic subsides. We look for a magnificent fall trade, and if prices are kept sufficiently low to prevent importations, we Irons from native ores are now quoted at \$22 @ \$22.50, 4 mos., for No. 1 Mill, and but little to be had as the furnaces are all sold up. Bituminous Coal Smelted Irons, from Lake Superior ores, \$22 @ \$23 for forge. Sale of No. 1 Foundry at \$24. Hanging Rock Charcoal Irons have gone up to \$26 at furnaces for No. 1 Foundry, which is \$26 at furnaces for No. 1 Foundry, which is about a dollar a ton more than it has been selling at here. In the present unsettled and excited condition of the market it is very difficult to give correct quotations, and it is almost impossible to obtain an option.

Bessemer Iron-Also continues in an excited and unsettled state, and in the absence of late sales it is difficult to give quosence of late sales it is difficult to give quotations. The only definite and reliable sale reported was a lot of 150 tons No. 3 at \$23. No. 1 is held at about \$25 @ \$26, with a rumored sale at \$24.50. The two largest buyers in this vicinity, the Edgar Thomson and the Pennsylvania Steel Rail mills, are reported as having contracted for enough Bessemer pig to last them until the close of the year, some of it to come from Europa but they some of it to come from Europe; but there appears to be considerable inquiry from points west of Pittsburgh, and it is worthy of notice that furnaces on the Shenango and Mahoning valleys have been reporting sales for some months past at prices de-liverable on cars at furnaces there equal to current rates here. The fact of the matter is, the market for Bessemer Iron is so badly mixed that it is difficult to straighten it out. Producers say they must have more money for their product, while consumers hesitate about any additional advance, and threaten to make increased purchases of foreign Bessemer, although purchases of foreign Bossemer, although it is not clear that they can do so at any great advantage, as it is possible, if not probable, that the foreign article may go up at the point of purchase, and already there has been an advance in ocean freights.

Muck Bar-Is in active demand, and, in sympathy with Pig Iron, prices are strong and tending upward; the last sale we heard of was at \$34.50, but it is now quoted at \$35.50 @ \$36.

Manufactured Iron .- At the meeting of the Western Iron Association here last Thursday, and which was largely attended, 90 per cent. of all the capacity in the West having been represented, it was agreed to naving been represented, it was agreed to adopt a 2.50¢ card, being another advance of two-tenths. It is likely the card will remain as it now is for some time, as any advance above 2½¢ will, according to the sliding scale, put up the price of puddling. There is no apparent abatement in the demand; the mills here are still obliged to refuse orders for early delivery, and price are at rong at the for early delivery, and prices are strong at the advance quoted.

Nails.-While there has been no concerted advance, either here or at Wheeling, it is doubtful whether any one can be found at either place willing to sell at the card rate of \$2.25, net, 60 days, 2 per cent. for cash. One Pittsburgh firm, Chess Smythe & Co., have sent out a \$2.60 card, with the usual abatesent out a \$2.50 card, with the usual abatement of 10¢ per keg on lots of 200 kegs and upward. To keep pace with Iron the base price of Nails should be \$3, and we shall not be surprised if they are advanced to \$2.75 within the next week or two. The supply, both in first and second hands, is light, and the indications are favorable for a good fall trade. fall trade.

Horse and Mule Shoes-Are firm and moderately active. The price was advanced on the 28th ultimo to \$3.50 and \$4.50 per keg for 100-keg lots.

Rallroad Spikes,—There is no abatement in the demand, and prices are still tending upward. We now quote at 2.85¢ @ 3¢, mill, 30 days. Rails.-We can report a sale of Steel

Rails for delivery next spring at \$48, and we hear of an offer of \$50 for 5000 tons for immediate delivery. The mills are all for immediate delivery. The mills are all sold up for this year, hence immediate is worth more than forward delivery. Old Iron Rails continue very scarce, and prices are still tending upward. We can report sales of foreign at \$29, with \$30 now asked. The market appears to be almost entirely bare of Old American Rails, and it is worthy on coal and other small roads, for which they answer almost as well as new ones.

Wrought Iron Pipe.—There is a con-Wrought Iron Pipe.—There is a continued good demand for both Gas and Steam Pipe, and while prices, as compared with those of last week, remain unchanged, in view of the enhanced cost of Pipe Iron a further reduction in discounts soon is not off for lots of 10,000 feet and upward, and 52½% for smaller lots. Boiler Tubes, 50% (@ 52½%. Oil Well Tubing and Casing are still quoted as before; but if there was any demand, we opine that discounts would soon be reduced considerably.

Steel.—There has been no change in prices as yet, but the market is sympathizing with that of Iron, and an advance soon is not improbable. There is to be an adis not improbable. There is to be an adjourned meeting of all the Steel makers of the country at Philadelphia on the 4th inst., when some changes in classification and prices will probably be made. Tool Steel is still quotable at 10½¢ @ 12½¢; Machinery do., 5¢ @ 7¢; Boiler Plate, 6¢ @ 7¢.

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Scrap.—The market for all kinds of Scrap is decidedly firmer, with an increasing de-

discounts at 75 % for car-load lots, and 70 & Nails are in good demand at the advanced 10 % for smaller lots.

Coke.-There has been no material change Coke.—There has been no material change in the situation for some time past. Notwithstanding the increased capacity the demand continues fully up to the supply, and many firms are sold considerably ahead. The growth of this important interest has been really wonderful within the past few years, and it is still growing. The production at the present time is estimated at about 30,000 tons per week. No change in prices, \$1.20 @ \$1.30 per ton, delivered free on cars at ovens.

Coal.—There is continued free movement by rail, but nothing by river, owing to the continued suspension of navigation. Some of the works in the Monongohela Valley are in operation, and the price paid for mining is 2½¢ ? bushel in the lower pools and 2¢ in the upper one. Price for lump coal here, delivered free on cars, 4¢ ? bushel. The prospect is considered favorable for a good fall and winter trade. fall and winter trade.

Petroleum .- This important interest continues in a very unsatisfactory condition, with but little prospect of any immediate improvement. There is no complaint to make so far as regards the volume of business; the shipments out of the producing ness; the shipments out of the producing region continue heavy, ranging from 40,000 to 50,000 barrels per day, but the price, which has been ranging at from 65¢ @ 67¢ \$\mathscr{P}\$ barrel, is ruinously low, and many of the producers are not making expenses. Refined is also very low, 6½¢@6¾¢ \$\mathscr{P}\$ gallon, delivered on the seaboard.

#### CHATTANOOGA.

Office of The Iron Age, Market and 8th Sts., 1 CHATTANOGA, Sept. 2, 1879.

General business in the South is good, in spite of several drawbacks. Crops are real-izing better than was expected, and prices for all kinds of provisions are fair. Much of the business life in the Iron district is attributable to the revival in manufactur-ing. Very little has so far been done in a ing. Very little has so far been done in a speculative way. Other lines of business have been acted on favorably by the Iron trade, and the result is general improve-

Pig Iron.—Prices have been somewhat irregular and excited during the week, making quotations rather difficult in most brands. Several Southern Iron houses are ordering invoices of Scotch Pig, the advance in Iron mixing such importation practicable. Meantime, arrangements are being perfected for putting six idle furnaces in this district in blast, and several new ones are building. We quote as nearly actual transactions We quote as nearly actual transactions as our unsteady market will permit: Coke Irons—No. 1 Foundry, \$20 @ \$23; No. 2, \$17 @ \$20; Gray Forge, \$17 @ \$18; White and Mottled, \$15 @ \$16. Hot-Blast Charcoal—No. 1 Foundry, extra, \$22 @ \$24; ditto, \$20 @ \$22; No. 2 Foundry, \$17 @ \$20; Gray Forge, \$17 @ \$20; White and Mottled, \$16. Cold Blast Charcoal—Car Wheel Mates \$25 60 @ \$27, 50; do Extra Wheel Metal, \$22.50 @ \$27.50; do., Extra Standard, \$24 @ \$29; Forge, \$17 @ \$22.

Muck Bar, &c. —\$30 @ \$35.50; Old Rails, \$22 @ \$23; Wrought Scrap, \$18 @ \$20; Old Car Wheels, \$19 @ \$20. Old Rails and wrought scrap are very stiff at quotations, with advancing tendencies.

Ores.—Brown Hematite, 50 to 56 %; per ton, \$1.75 @ \$2.25. Red Fossiliferous, 50 @ 56 %; per ton, \$1.20 @ \$1.60. The above prices for ores delivered in Chattanooga on cars or on the wharf from flat boats.

Nails.-The demand continues very brisk indeed, enabling the mills to select their cus-tomers. No sales are made except on daily rates. We quote at \$2.50 rates, \$2.40 prob-ably being the best that large buyers could

Manufactured Iron.-All articles have Manufactured Iron,—All articles have advanced, and the advance has been so rapid for a few weeks as to deter the mill managers from filling orders more than a few days ahead. Especially has the advance been marked and stiff in the lighter irons. We quote: Merchant Bars, 2.35¢; Railroad Spikes, 3¢; Light Rail, 2.25¢; Track Bolts, 3.75¢; Trestle Bolts, 4.50¢.

Coke.—We quote 10¢ per bushel for washed foundry. Furnace, full supply, at \$2 per ton, free on cars at Chattanooga or South Pittsburg.

Pig Lead—5¢; Ingot Copper, 18¢.

Iron Rails.—The mill here is full of orders for some months to come. Orders at less than \$40 @ \$42 ? ton would not be considered at all, nor at these rates except for future delivery, say late in the fall.

Steel Rails.-We quote at \$47 at mill, with short supply.

#### ROSTON.

AUGUST 30 .- We note a continued active demand for Pig Iron, with a constant hard-ening tendency in prices. The shipping port rates at the close have advanced to port rates at the close have advanced to \$22 @ \$23 for No. 1 X; \$20 @ \$21 for No. 2 X; \$19 @ \$20 for Gray Forge, and \$17 for White and Mottled. Freights to Boston, \$1.30. Spot lots of Pig Iron are scarce and firm at \$24 @ \$25 for No. 1 X and \$22.50 @ \$23.50 for No. 2 X. Old Rails firm at \$25 @ \$25,0 with a rising tendency. Manufactured Iron.—The demand for Refined Iron continues brisk at \$2 @ \$2.10 for laws. cy. Manufactured Iron.—Ine delinated Refined Iron continues brisk at \$2 @ \$2.10 for large lots from mill, and \$2.10 @ \$2.25 for smaller lots from the Boston stores. for large lots from hill, and \$2.10 @ \$2.25 for smaller lots from the Boston stores. Plate and Tank have still further advanced, and we quote \$2.65 @ \$2.75 for Common, \$2.85 @ \$3 for C No. 1, \$3.10 @ \$3.25 for Shell, and \$4.10 @ \$4.25 for Flange. Sheet Iron is also selling at higher figures, and the production of the mills is so far contracted for that it is difficult to secure the fulfilment of any early orders. Manufacturers have again advanced their prices on Galvanized. We quote Boston store prices: 3½ @ 3½ for Nos. 12 to 18, and 3½ @ 0 d for Nos. 20 to 24; 3½ @ 0 d for Nos. 20 to 24; 3½ @ 0 d for Nos. 20 to 24; 3½ @ 0 d for Nos. 20 to 24; 3½ @ 0 d for Nos. 20 to 24; 3½ @ 0 d for Nos. 20 to 28; 13¢ for Russia, perfor Galvanized, Nos. 14 to 20; 8½ @ 0 l l d for Nos. 20 to 28; 13¢ for Russia, perfor Galvanized, Nos. 14 to 20; 8½ for Nos. 21 to 28; 13¢ for Russia, perfor Galvanized, Nos. 14 to 20; 8½ for Nos. 21 to 28; 13¢ for Russia, perfor do., Nos. 21 to 28; 13¢ for Russia, perford. Nos. 25 to 26; 4½ for Nos. 25 to 26; 14½ for Nos. 25 to

rates, quoting \$2.35 net for rod. to 6od.

Steel is in fair demand from the Boston stange Steel is in fair demand from the Boston stores, and prices show a rising tendty, and ency. We quote: American Tool Steel at 11½¢ @ 13¢; English do. at 14¢ @ 15¢; American Spring Steel at 5¢ @ 6½¢; English do. at 7¢ @ 8¢; Tire Steel at 3½¢ & 16ew @ 4¢; Bessemer Machinery at 4¢ @ 5½¢; and Cast do. at 6¢ @ 7¢. Copper has met with a little better local demand, and store prices are steady at 16½¢. met with a little better local demand, and store prices are steady at 16¼¢ @ 17¢. Large lots to arrive are available at 16¼¢. There is no change in manufactures, and we continue to quote New Sheathing at 22¢; Braziers at 24¢ @ 26¢, and Bolts at 24¢; Yellow Metal Sheathing sells at 13½¢ @ 14¢ for American and 12¢ for English, the latter in bond. Lead is firm and unchanged. Large lots of Pig are quoted at 4.25¢. Small lots of Pig from store are firm at 4½¢ @ 5¢. Manufactures are unchanged, and we quote: Lead Pipe, 5½¢; Tin-lined Pipe, 12¢; Bar Lead, 6¢; Sheet Lead, 6¢; Block-Tin Pipe, Jead, 0¢; Sheet Lead, 0¢; Sheek-Im Fipe, 30¢; all of these are subject to the usual trade, or 10 g discount. Antimony is still in light demand at 11 ½¢ for large lots, and 12¢ @ 13¢ for smaller parcels. Spelter has continued to show a rising spetter has continued to show a rising tendency, and carload lots are hardly available at this point to-day under 5%¢, while smaller parcels command 6½¢ @ 7¢. Sheet Zinc meets with a continued active inquiry, and store prices have further advanced to 74¢ @ 8½¢. Tin is in active demand at firm prices. Tin Plates are higher. We quote carload lots of Straits Pig at 15¾¢, and smaller lots as below. We quote: Straits, 16\(\psi\_{\psi} \emptyre{\emp Commercial Bulletin.

Messrs. E. L. Harper & Co., under date of Aug. 30, write as follows: The demand has been good, but perhaps not as active as it has been. Buyers are inclined to act conservatively at present rates, claiming that they do not anticipate any further advance at present. At the same time, the light stocks of all grades, the large and increased consumption, both for mill and foundry use, and the impossibility of any considerable. and the impossibility of any considerable increase of production for some morths at increase of production for some morths at least, render the market strong, and there is no inclination on the part of sellers to accept any orders at concessions, but rather a disposition to demand a further advance. All the special lots remaining of Cold-blast Irons have been picked up, and this grade, which has hardly felt the advance yet, is now stiffening up rapidly, and will, no doubt, undergo a considerable improvement. The improvement in Blooms and Billets noted in our last continues, and the light supply of Old Rails and other Wrought Scrap, and the Rails and other Wrought Scrap, and the large demand for rolling-mill products at remunerative prices, give reason to anticipate a decided reaction in this class of stock, which has for so long, under unfavorable conditions, been begging on the market at minal prices. HOT-BLAST FOUNDRY.

Hanging Rock C. C., No. 1 \$28.00 @ 30.00
C. C., No. 9 90.00 (0) 27.00
Virginia Coke
Shawnee S. C "
Hocking Valley S. C
Alice Coke, No. 1 25,00 @ 26.00
No. 2
Southern Coke No. 1 84.00 @ 25.00
" No. 2 22.00 @ 23.00
Ohio Stone Coal, No. 1 23.00 @ 24.00
" No. 2
FORGE IRONS.
Hanging Rock, No. 1 C. C 24.00 @ 25.00
Coke None offering
Longdalo No - Coke None offering.
Longdale, No. 1 Coke
D. F. NO. I CORE
Red Short, No. 1 Coke
Cold-Short, No. 1 22.00 @ 23.00
Old Rails, primeNone offering.
Strong Neutral No.   Coke 23.00 @ 24.00
Southern CharcoalNone offering.
Coke
CAR WHEEL AND MALLEABLE.
W
Hanging Rock C. B 33.00 @ 35.00
Southernand Western Brands 30.00@ 32.00
Lake Superior 38.00 @ 30.00
Lake Superior
Blooms 55.00 @
Peckham's Pat. C. C. Refined Double
Hammered Flange Blooms (2.00 @

#### BALTIMORE.

South Pittsburg.

Coal.—There is no change in the market for in prices. We quote run of mine, free on cars in Chattanooga, at \$1.25 @ \$1.75 \}?

on. Lump, as per quality, 10\$\phi\$ @ \$12\$\phi\$ \\ \eta\$ if Trade rules very active, with values firm and advaucing at annexed figures: Ref. Bar Iron, 1 to 6 by 3/4 to 1 1/2 to 2 3-10 (3) 2 4-10

and Square  Hoop Iron, 1½ wide and upward. Band Iron, from 1½ to 4 in. wide. Horse-shoe Iron. Norway Nail Rods. Black Diamond Cast Steel. Machinery Steel. Cast Spring Steel. Homogeneous Steel Plate Common Horse Nails R. R. Spikes, 5½ x 5 · 16. R. R. Spikes, 5½ x 5 · 16. Horse shoes, \$\psi\$ keg of 100 Perkins. Horse shoes, \$\psi\$ keg of 100	66 66 66 66 66 66 66	3 23/4 3 49/4 125/7 6 63/2 10 23/4	- BBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBB	2.624
Mule shoes	Ibs		\$	3.62 4
Putnam Horse Nails 9 25 18 Globe Horse Nails 9 25 18	9		7 = 1	6

IOWB :				
Baltimore Charco	al Wheel I	ron	26.00 @ 2	29.0
Virginia "			27.00 @ 3	0.0
Anthracite No. 1			21.00 M s	12.0
NO. 2			NO.00 (0) a	27 0
			18.00 @ 1	10.0
" Mottle	1 and Whi	te	16.00 @ v	m -
Charcom, C. B. El	coms		50.00 @ 0	100
Refined Blooms	*******	****** **	45.00 @ 5	0.0
	#FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF			

Producers are nearly all behind on their Producers are nearly all behind on their monthly deliveries, and some of the consumers have had to buy or borrow from their neighbors to keep their foundries running. The usual time, 4 mos., is allowed on quotations below. Most of the sales now, however, are for cash, at a difference of about 50¢ \$\text{\$\psi}\$ ton:

١,	FOUNDRY IRONS,
3	No. 1 Hanging Rock, Charcoal\$28.00 @ 29.00
.	No. 2 " " 16.00 @ 27.00
П	No. 1 Southern, Charcoal 26,00 @ 27.00
1	No. 2 " " 25.00 @ 26.co
٠	No. 1 Hanging Rock, Stonecoal and
	Coke 26.03 @ 27.00
	No. 2 Hanging Rock, Stonecoal and
	Coke 25.co @ 26.00
	No. 1 Southern, Stonecoal and Coke 25.00 @ 26.00
П	No. 2 " 24.00 10 25.00
	"American Scotch" 24.00 @ 26.00
	Silver Gray 20.00 @ 21.00
	*****
1	MILL IRONS.
1	No. 1 Charcoal, Cold-short and Neut'l, 23.00 24.00 No. 1 Stonecoal and Coke, Cold-short
	and Neutral
	and Neutral 21.00 @ 22.00
	No. 1 Missouri and Indiana Red-short, 24.00 @ 25.00
	White and Mottled, Cold-short and
l	Neutral 18.00 @ 19.00
L	CAR WHEEL AND MALLEABLE IRONS.
	Hanging Pools Cold blast
	Hanging Rock, Cold-blast 32.00 @ 34.03
	Alabama and Georgia, Cold-blast 30.00 7 32.00
,	Kentucky, Cold-blast 30.00 @ 34.00

W. B. BELKNAP & Co., Iron and Hardware

Merchants, Nos. 113 and 115 West Main street, under date of Sept. 1, write as fol-lows: The market continues strong and lows: The market continues strong and advancing, due to the very large demand, which the new prices seem only to have stimulated, instead of discouraging. The meeting at Pittsburgh was foreshadowed by meeting at Pittsburgh was foreshadowed by the course adouted at Cincinnati a week previous, and \$2.50 as a minimum was a fore-gone conclusion. The advisability of calling a meeting at the present juncture was dis-puted by some, as the cast-iron rules of pre-vious conventions seem to have been made only to betray their own brittleness; but the only to betray their own brittleness; but the assuring feature of this meeting was in the latitude allowed sellers. As the leading makers expressed it, if anybody wanted to execute orders below \$2.50 while their order execute orders below \$2.50 while their order books were filling up at one end faster than they could be cleaned at the other, they were welcome to do so. The advance of another 10¢ on Nails has been well sustained, though it seems hardly commensurate with the advance of Iron. To see Nails sell at \$2.35 while Iron commands \$2.50 is an odd spectacle, not likely to continue long. Spring and Axle makers have still further advanced their prices, while Spikes and Bolts, and everything pertaining to railroad equipment, are practically commanding the Bolts, and everything pertaining to railroad equipment, are practically commanding the makers' own prices. The demand for Sheet Iron is still ahead of the supply and the prices apt to advance still further. There is a variety of opinion as to how long the prices will continue to advance or hold even as high as they are. Some say four months and others until next spring, while sellers maintain that an era of prosperity is just opening for the whole country. We shall

#### RICHMOND.

e good prices for several years.

Mr. Asa Snyder, Iron Merchant and Fur-nace Agent, writes as follows under date of Sept. I: I continue last week's quotations, although it would be difficult to fill orders on that hasis. Choice Foundry Pig Iron and Forge Pig Iron are scarce. About 400 tons were sold the past week. Old Rails have advanced \$1.50 \(\frac{1}{12}\) ton:

marancoa er 30 fi son .		
American Scotch Pig Iron	@	23.50
Anthracite, No. 1	22.50 @	23.50
11 No. 2	21.50 @	22.50
" No. 3	18.50 @	20,00
" Mottled and White	17.00 @	18.00
Coke, No. 1	@	
No. 8	@	
Va. Cold-blast Charcoal, Cold-short	24.00 @	
Va. " Neutral	28.00 @	29.00
Va. Warm-blast " Red-short	@	
Old Rails	23.50 @	24.50
Wrought Scrap No. 1	19.00 (6)	20,00
Cast " (machinery)	17.00 66	18.00
Richmond Refined Bar Iron	21/4 C. @	
Freights to Philadelphia, \$1.90 per to	n of 234	o lbs.
by sail.		

#### Our English Letter.

Review of the British Iron, Steel, Metal and Hardware Trades.

(From our Regular Correspondent.)

LONDON, ENG., Aug. 18, 1879. YOUR TRADE REVIVAL.

as reported by the telegrams of the week, causing most of us to take a more hopeful view of things. We are almost beginning to believe that the much talked of, and most ardently wished for, renewal of activity is close at hand. There are those who are sufficiently bold to state that there is no doubt whatever about the matter, while others, less sanguine and rendered cautious others, less sanguine and rendered cautious by the vicissitudes of long and varied ex-perience, intimate that they do not think we shall experience any real and lasting lift this year. So far as our present positive intel-ligence goes, it must certainly be confessed that our hopes and expectations are largely centered in the United States. It used to be said that the state of the American market was the key to the trade of the whole world We trust that the adage may still hold good and that its application within the next few weeks may prove its appositeness. It is most certain that we hear of the remarkable briskness of your iron and allied indus-tries with the highest possible pleasure, and it is scarcely less certain that we hope (when I say "we" you will understand that I mean the British manufacturers) to resume our business relations with you on a large scale, notwithstanding the formidable im-pediment of the tariff. The cablegrams received on this side from Philadelphia and elsewhere since the date of my last letter, have told us that all your iron works are full of orders; that early deliveries are no longer undertaken, and that prices are rising in all directions. Mention is also made of the circumstance that great apprehensions are expressed lest British manufacturers should again establish their connection with you. On this point I may say that

LARGE AMERICAN ORDERS

past week. It is difficult to trace out and particularize each individual case, but I am told that Rhymney and Cyfarthfa have booked orders for (iron) rails at £4. 2/6 and £4. 10/, and that Dowlais and Ebbw Vale, as well as John Brown & Co., of Sheffield, have had considerable inquiries for spiegeleisen at about £4. 10/ @ £4. 15/. For steel rails a couple of orders of some magnitude are stated North Country house, and it is tacitly assumed that either Bolckow, Vaughan & Co. or Wilson & Cam-Bolckow, Vaughan & Co. or Wilson & Cammell have secured them. At Barrow matters are kept very quiet, but I understand Mr. Smith is negotiating for your side; whether for the States or for Canada I cannot say at pressent. Two or three of the Welsh houses are sending consignments of sheets and bars across, and a Liverpool merchant is stated to have given out orders for hoops and cotton ties which are understood to be meant for your market. At Shefield two or three cotton ties which are understood to be meant for your market. At Sheffield two or three of the steel manufacturers are forwarding larger lots of fine spring, sheet, rod, plow plate, ax, &c., steel than for a couple of years or so past. Jessops and Firths are, I hear, preparing for larger orders, which they, with others, feel convinced must result from the current briskness of your metal-lurgical industries. In the Cleveland district there is some talk of feeling the pulse of the United States market as regards the local pig iron, but at present nothing very de-finite has come about. On the whole, as requiries from your side are being made in our leading markets.

in several respects, mainly in consequence of the reports from the United States. In Scotland, especially, the alteration is very marked, and there has been more excite-ment on the Glasgow warrant exchange than has been known for years. The speculators have, no doubt, eagerly seized the opportunity thus afforded for distinguishing themselves, and have, consequently, had a hand in the rise which has marked the final quotations of the week. At the same time it must be recorded that the actual sales of makers' iron have been considerably above the average, and that of the lots which have been disposed of a large proportion is for shipment for your Eastern ports—to which, by-the-bye, freights from the Clyde have become higher within the past fortnight. Average weekly consignments of Scotch pig to you will for some time be 1500 to 3000 tons, mostly Eglinton, Carnbroe, Glengargarnock and Coltness. In the Middlerboro' district pigs have become firmer in price in sympathy with the rise in Scotland, and the quotations of the week. At the same time sympathy with the rise in Scotland, and the same cause may, in the abstract, be assigned for the improved tone shown in Derbyshire, Lancashire and South Staffordshire as re-gards all grades of first processes iron. Both at Birmingham and Wolverhampton there is a better call for most sorts of fin-ished iron, especially in respect of railroads and other kinds in which foreign competi-tion has been serious for a long time rest tion has been serious for a long time past. Belgian prices having gone up, our manufac-turers are enabled to supply a better class turers are enabled to supply a better class of iron at pretty nearly the same quotations. Owing to the advance in spelter, the Bir mingham, Bristol and London galvanizers have announced an increase of 20/per ton in their prices. In order to keep up zinc (which is £3 a ton dearer within the month) a powerful foreign syndicate, headed by the Veille Montagne Company, has been formed. Its operations are stated to be limited to 12 months as a fixed minimum.

Veille Montagne Company, has been formed, it operations are stated to be limited to 12 months as a fixed minimum.

SCOTCH PIG IRON

has advanced, and is stronger all round, with higher figures for most makers' brands. In warrants there has been a heavy business, and in manufacturer's produce the transactions have exceeded a full average. The official statistics published by John E. Swan & Bros. (Limited), Glasgow, show that there are 291,796 tons in Connal's stores, an increase over the stock held in the same place a year ago of 101,000 tons. The aggregate foreign shipments have been 188,792 tons, and coastwise 108,756, a total of 297,548 tons, against 239,451 in the same period of 1878, or a balance of 58,697 tons in favor of this year. The same firm's circular quotes pig for ballast 37/6 per ton. Messrs. James Watson & Co. reported, August 16: "During the past week the Scotch pig iron market has been strong and excited with a glarge business done. On Monday the market has been strong and excited with a glarge business was done from 42/6 @ 43/, cash, closing at 42/9 per ton. To-day the price further improved from 43/1½ @ 43/4; cash, closing at 42/9 per ton. To-day the price further improved from 43/1½ @ 43/4; cash, closing at 42/9 per ton. To-day the price further improved from 43/1½ @ 43/4; cash, closing buyers at the latter figure; sellers at 43/5 per ton. The demand for makers' iron is also improved at enhanced values. The shippents last week were 75/504 tons, as compared with 5993 tons for 27504 tons values. The shipments last week were 7504 tons, as compared with 5993 tons for the corresponding week of 1878." We

quote:								
-					2	No. 1.	No.	3
G. M. B., at Gl	asgov	۴		 	 	- 43/	41	1
Gartsherrie,	0.0			 		47/	43	3/
Coltness,	66			 	 	53/	. 43	
Summerlee,	46					45/6	42	
Langloan,	66					50/	43	
Carnbroe,						45/	43	
Calder, at Por Glengarnock,	ot And	CLEAN	201	 		47/	43	
Eglinton,	BU ZETU	1100				43/9	42	
Dalmellington		4.0				43/3	42	
Shotts, at Leit							44	

Of manufactured iron the current ship ments from the Clyde ports are on a slightly smaller scale than of late.

THE NORTHAMPTONSHIRE ORE DEPOSITS have been rediscovered by a London corre spondent of the Leeds Mercury, who tells hi spondent of the Leeds Mercury, who tens his readers an extraordinary story as to the immensity of the mineral wealth of that county, and hints at all sorts of fabulous things, some of which, unfortunately, are not new, and others not quite true. I merely allude to the subject in order that your read-ers may not be inadvertently misled by the are reported to have been received here (and in other parts of Great Britain) within the circle on the subject.

lieve, about to open up direct business relations with the United States—a market which they expect to yield orders for steel castings and other articles manufactured in that material.

#### NEWS FROM SHEFFIELD

is not cheerful, nor does it seem likely to be so. There is a somewhat improved tone in the heavier branches of industry, and there is certainly more work in course of execution at several of the larger iron and steel works, but the average of the town and logreat prospect of an immediate amelioration.
Inquiries are said to be in circulation for a variety of Sheffield products, but there does not seem to be a very sanguine expectation of large orders resulting. The briskness re-ported from your markets has naturally afforded much consolation to the older steel manufacturers, many of whom have still a fair connection with your consumers, and whose ordinary channels are already beginning to quicken with the impulse of the hoped-for incoming tide. The cutlery, tool, file, saw and other light trades are moving slowly, the best orders recently received having been those from distant foreign and colonial markets. Many of the Sheffield manufacturers have hitherto transacted a large proportion of their foreign trade through London, Liverpool and Birmingham merchants, but the stern necessities of the merchants, but the stern necessities of the past two or three years have sent them further afield, and have shown them the advantage of dealing with their distant customers direct. There will always be merchants, factors and other middlemen, but their vocation is certain to be restricted within warreness likely are related. within narrower limits as time grows older, and the provincial men of this class, at all eveuts, may to a great extent count their days as being numbered. Another TESTIMONIAL TO AMERICAN HARDWARES

appeared in the Ironmonger of August 16, in the shape of a letter from M. S. Raine, of

lers, clocks, revolvers, rifles, ready-made doors, windows, hickory rims and spokes, pumps, brooms, &c., are among the American goods to be seen in the stores here; also German cutlery, Belgian wire nails and other odd goods, although the greater part of stocks are undoubtedly of English manufac-ture." He gives other particulars which seem to show that South Africa is, in time, likely to be a great consuming market for all kinds of hardwares.

#### AT BIRMINGHAM

business has slightly improved since I last wrote, especially in the foundry, iron and brass departments. For finished iron, too, the market is decidedly more healthy, and there is a manifest disposition on the part of sellers to hold out for rather more money than has been accorded to them by the favor of buyers for some time past. Owing to the rise in spelter the Birmingham, &c., galvanizers have advanced their

detailed higher up), and inquiries are afoot on account of others. The shipping returns show that there are already two or three cargoes of this afloat for New York and Philadelphia. It is also worthy of notice Philadelphia. It is also worthy of notice that direct consignments of tin plates are being made to your side, two lots of 500 tons each having left Cardiff and Newport for New York and Philadelphia, respectively. If this sort of thing should develop, our friends, the Liverpool merchants, may in time find their occupation gone. The dispute with the workmen in the tin plate branches is likely to assume the form of a branches is likely to assume the form of a strike unless (as is probable) the masters withdraw their demands for a general reduction in view of the tentative revival business. I may note here that Mr. W. Crawshay declines to contest the Parlia-mentary representation of Merthyr Tydfil.

#### FOREIGN.

#### FRANCE.

(Moniteur des Interets Materiels.

Paris, Aug 17, 1879.—Metals.—Although the orders lately received have not been large, they have been all the more numerous, and continue to be a sign of a general and healthy revival. Copper has been weak after a rise, since our last report, of 1.25 francs in Ingots and Slabs, and 750.

# Chili Bars. We quote: Ingots and Slabs, 146.25 francs; Chili Bars, 14.1.25 & 14.75, and Best Selected and Corocoro, 150 the 100 kilos. Havre is mominal at 13.75 & 147,30 for Chili Bars. At Marselles Sheet Copper, has given way 2.50 francs; Refined Ingots and Bolts are also declining. They quote small Refined Ingots, 132.50; Sheet Copper, 770; Yellow Metal Sheathing, 170; Copper Bolts, 177, 30, and ditto Sheathing, 170. Tin.—Anadvance in English is barely sustained. We quote: Billiton, 172.50; Banca, 174.25; Straits and Australian, 175, and English, 163.50. At Marseilles Tin is quiet at a decline of 5 francs in Banca. They quote the latter, French and English, 175, and Straits, 170. Lead deliverable at Paris has become quite stiff. We quote the range, 34.50 & 35 here, and Munufactures, 40. First Fusion Soft Spanish commands 35.50 & 36 at Havre. An improvement of 50°, to 1 franc is reported from Marseilles. They quote the various sorts, 31 & 34; Fipe and Sheet, 37, and Shot, 37.50. Spelter,—Holders are firm, and raise their pretensions continually about 1 franc to 1.50 francs per day for a few days past. This has driven Spelter to 43 & 44 here and at Havre for lesian sorts, and Sheet Zinc now commands 60 fancs the 100 kilos. Havre has receded 50°, and 100 toes Silesian, 36.50 & 30°. Vieille Montagne Sheet Zinc has risen 1 franc at Marseilles; they quote the same, 53, and other sorts, 51; Old Remelted, 25. Iron.—Iron flooring remains in good request and firm in the Paris market. There is, so far as we are able to judge, no decline in Iron generally in prospect, on the contrary, the chances seem to be all in the opposite direction. Thus even the Champagne lorges, which seemed to entertain their doubts as to the maintenance of rates, have changed their views, and oegin to ask more money, especially on contracts for future delivery. Nor do they engage to deliver any goods on new orders till the expiration of two months from date. The consequence is extreme firmness in that region. They have indeed their present capac

#### BELGIUN.

BELGIUN.

(Revue Universelle.)

BRUSSELS, Aug. 17, 1870.—Iron.—As is usually the case, most of Belgian ironmasters in the habit of attending our from and Coal Exchange spend a couple of weeks in the watering places and stay there; but this year many of them come on here regularly on 'Change day, which is a good sign, for it shows that business is picking up and that their presence, if not positively required, is at least desirable. Meanwhile the Government has again held an adjudication for the procurement has again held an adjudication for the procurement of 19 lots of rolling stock, at which prices nowed firm. The new railway freight rates for transit goods to the German frontier of the Palatinate have become operative since the 1st Instant. The general business outlook in the Iron trade about us may not be called a brilliant one, but it has again improved a little since we last reported. Crop prospects in neighboring countries are decidedly better, and an undertone of greater confidence is unmistakable, both in Germany and France, a feeling which spreads among Belgian producers and consumers likewise, and engenders the more lively interest which everybody begins to take in the immediate future. One of the best signs is the increase in building and the consequent activity in our brick yards, which will soon make itself felt in a great many ways in the Iron and kindred trades. To this there will be added, we trust, a good demand for our manufactures from the East and other quarters; indeed, we expect this confidently, in view of the great inducements which present cheapness holds out to them. Cod.—Our Coal mines, with the exception of the demand to supply our brick yards, which procures them some orders, are not active, but are making some improvements to furnish better quantity in anticipation of more doing. (Revue Universel

#### GERMANY.

HAMBURG, Aug. 16, 1879.—Metals.—As has been insima'ed by us in previous reports, there is gradually more business springing up in the German markets. Consumers have been hesitating all along, but in most instances the delay has done them no good, for some speculation having intervened in various metals, prices have improved by degrees, and with the sole exception of Copper, the consumer cannot now replenish his stock as favorably as he was able to do a month ago. The revival of the speculative element, so long dormant, was to be expected; the influences which checked it during so many years are disappearing, and it will in all likelihood continue to expand until the money market undergoes a great change not now apparent. Copper.—This metal has remained languid. Berlin quotes English and Australian 52 © 64 marks the 50 kilos., and Mansfield 62,50 © 64. We are quiet here as follows: Drontheim, 64; Minnesota, 80; Hecla, 63; and English Tough Cake, 62 © 64. Tin—Has been improving, especially so at Berlin, where they quote Hanca 6,50 © 70, and English 65,50 © 67. There is as yet no quotable improvement in this market. Lead.—A much better inquiry is manifesting itself in the German Lead markets, particularly at Berlin, and an upward tendency in noticeable. At Berlin, Tarnowitz, Hartz and Saxonian have been paid 14,50 © 14,75 marks. There is no alteration here. Spelter—Makers having agreed not to sacrifice their product any more, there has been a rather rapid improvement. Silesian Union is firm at 15,20 at Breslau, at 16 © 16,50 at Berlin, and nominal here for the want of a supply, immediate and future.

#### HOLLAND. (Kreglinger & Co.)

ROTTERDAM, Aug. 13, 1879.—Tim.—Banca, prompt, sold at 38.25, 38.12½ and 38.25; guilders the 50 kilo8., and forward delivery at 38.25 and 38.50; Billiton ex store at 37.75. To-day Banca sold at 39.50, and Billiton, spot and afloat, at 39 guilders, at which sales have also been made. August 19.—The market is firmer; Banca has risen from 39.50 to 40.50, and Billiton from 39 to 40.

#### EAST INDIES.

EAST INDIES.

SINGAPORE, July 15, 1870.—Tin.—The market is very dull owing to unfavorable news from London, and prices have declined to \$10,20 per picul, and at this only a portion of what is offering can be sold. The shipments to date this month from the Straits settlements to New York have been 173 tons, all by steamers via. England. Tonnage.—As we anticipated, rates to the United Kingdom have not been maintained, several vessels having arrived. For London, rates for deadweight have declined to 25/2 and for Liverpool to 27/6. During the fortnight the C L. Pearson, Gemsbock, Queen of the Seas and Mystery have all cleared for New York without any Tin on board. The Olustee has taken the berth at 20/ for deadweight, and there are still loading the Susan et Blaisdell and Corings. For Boston the Ellisworth has been chartered on secret terms. Exchange—is weak, and good credits can be sold at 3/10 for immediate or forward delivery.

The remains of an old furnace or forge, long since dismantled, which supplied the Continental army with cannon and ball, are still visible on the Black Rock road in York county, in this State. Parties in examining the heaps of debris among the ruins fre-quently bring cannon balls and other interesting relics to the surface.

#### INDUSTRIAL ITEMS.

MAINE.

The Katahdin Iron Works are running, with good prospects ahead for continued prosperity.

A company in Westfield have, after much A company in Westfield have, after much experimenting, perfected a whoel of remarkable cutting qualities, composed of corundum. In a scale of 12, rating the diamond at 12, corundum stands at 11; while emery averages 8½ in hardness. The difficult problem, attempted by so many, of finding a heat strong consists to held ing a base strong enough to hold corundum without interfering with its cutting qualities, has, it is thought at last been solved by a happy combination of materials and an in-genious use of the process of vitrification. The cost of the corundum wheel is about 25 per cent. more than that of the ordinary emery wheel.

The superintendent of the Wason car shop at Springfield has invented a new de-vice in the building of sleeping cars, for which the following specific advantages are claimed: A weight 450 pounds less to the section than in ordinary sleeping cars, lighter, yet just as strong ironwork, iron seat frames, the entire absence of spring locks and catches, no heavy weight in the roof, only one detachable piece—the upper berth bar—in a section, equal speed in making up berths with other cars, the work can be set up in a common passenger car, no rattling or jarring, no hinges or spring bolts and no difference if the car gets crooked or out of line. A car equipped with this in-vention is said to cost much less than the

cars now in use.

The manufacture of the Farmer patent bit and edge tools is to be commenced in the unoccupied Partridge Fork Works at Leominster

The Tremont Nail Company, Parker Mills and Franconia Iron Company, pay nearly a quarter of the whole amount raised by taxation in Wareham.

Swords are at present the chief product Swords are at present the chief product of the Ames & Gaylord companies, of Chico-pee. The Chicopee Manufacturing Com-pany are laying about a million brick this season, besides their heavy stone job in the canal.

A new foundry business is to be started at Attleboro', H. N. Daggett having leased a portion of the cotton factory to Sishop & Gavitt, who will transfer the business of the Rhode Island Stove Factory, now located at Pawtucket. A foundry building, 50 x 100 feet, is being erected, and the main factory will be fitted up for the new business. About 40 hands will be employed.

At the annual meeting of the Calumet and

Hecla Mining Company, recently held in Boston, the following directors were elected: Alexander Agassiz, Quincy A. Shaw, Geo. Higginson, H. H. Hunnewell and James N. Wright. Prof. Alexander Agassiz was reelected president, and Charles W. Seabury treasurer and secretary. The report of the treasurer stated that the excess of assets

received a contract to furnish the Turkish government with 5000 No. 3 army revolvers, and they will begin with the order imme-

#### NEW YORK.

It is reported that the malleable iron works at Hoosick Falls are to start up soon on full time. The Mowing Machine Com-pany hope to get well under way on the sea-son's work of 1879 '80 by the middle of the

coming month.

The extensive rolling mills at Spuyten Duyvil, N. Y., which have been idle for the past eight years, are to be put in operation about the 15th. They will commence on a single contract for 10,000 tons of railroad iron for a Boston party. The rails are to be delivered at Kansas City, and the price will be \$46 per ton, delivered. The N. Y. C. & H. R. B. R. are putting a siding into this mill. The mill will be run under the firm name of Welsh & Barnum.

#### NEW JERSEY

The large blast furnace blowing engine which was built by I. P. Morris & Co., and which was on exhibition at the Centennial, has been purchased by the Andover Iron

report that the Swedes Furnace is to blow in. No. 1 is in good repair, but needs new in. No. 1 is in good repair, but needs new hot blast and engine; No. 2 is a complete wreck, and will require rebuilding from the

The Union Glass Works, of New Castle, will consist when completed of a building 50 by 160 feet, and two stories high for by 160 feet, and two stories high for the office, packing and cutting rooms, and another, 60 by 76 feet, with two wings, each 14 by 50 feet. The wings will each contain a double blowing furnace for five blowers, and in the center the melting furnaces. Th factory will have ten pots and a capacity of a thousand boxes of window glass per week. It will employ about 75 men.
J. D. Steele & Son, of Pottstown, shipped

in one day recently to casks of sad iron 6500 pounds, and followed it the next day with a duplicate shipment. They manu-facture some 10 tons per week. The defacture some 10 tons per week. mand for their sad irons is more than equal to the supply. The greater number are sent to the Southern States, where the demand for them is great. The work of this firm is not confined to this branch They are general founders, engineers and machinists. Their constructing department

is now in full operation.

But one furnace in the Shenango Valley is unning on mill iron for the market. The Allen Furnace is reported to have 2000 ons of iron on hand, more than all the other

furnaces of this val'ey combined.

The Fannie Furnace, Westwent into blast the 29th ult. West Middlesex, The "big rolling mill" at Hollidaysburg, which has been idle for years, has been re-

120 feet wide, giving ample room for secur ing under cover all stock needed in carrying on the works. A sunken track has been made around the works so that the tops of ear trucks are on a level with the ground, making the loading and unloading more expeditious and requiring one-half less hands to do the work.

to do the work.

All the manufacturing establishments at
Erie are in active operation, giving the city prosperous appearance.

The Millerstown Furnace has been sold by the Sheriff to James Singmaster, attorney for the first mortgage bondholders for \$80,-

At the sale of the personal property of the late Charles Daniel, of Bethlehem, 464 shares of the Bethlehem Iron Company were sold for \$45 per share. The purchase was made for a well-known Bethlehem capitalist who does not desire his name made known in this connection

#### PITTSBURGH AND VICINITY.

The Beaver Falls Shovel Works, H. M. Meyers & Co., are running 11 hours a day, and the company are shipping about 3000 shovels per week.

Graff, Bennett & Co. will only operate the

ouddling furn :ces of the Fort Pitt Iron and Steel Works for the present, but will put the

nearly seven times the amount of business this month that they did in the same month chain makers.

The Steubenville Herald says the Pitts

burgh Forge Company have taken W. J. Hammond's lease of the Alikanna Works, near that city. They will manufacture muck iron and take it there to be worked up, their own works not having sufficient

capacity to supply the present demand.

The number of coke ovens now in operation between Mount Pleasant and Pradford, in the adjoining county of Westmoreland, is 1490. The number in process of construc-

tion is 735.
The Keystone Rolling Mill, formerly owned by Glass, Neely & Co., and now operated under lease by the National Tube Works, has been bought by a company consisting of John I. Williams, late manager of the Mill-vale Mill of Graff, Bennett & Co.; Hon. Wall of Graff, Bennett & Co.; Hon. Henry M. Long, Speaker of the Pennsylvania House of Representatives; N. McDowell, City Engineer of Allegheny, and others, who will operate it under the firm name of Williams, Long & McDowell. The new firm will assume control at once, and will operate the mill as soon as the present lease with the tube works expires, about the middle of November. The mill has a capacity of about 15,000 tons of iron annually

#### WEST VIRGINIA.

For the week ending Aug. 23 the Riverside Iron Works cut 7413, kegs of nails with 126 machines. This is the largest number of kegs ever cut in one week at any mill in the country.

All of the rolling mills in the Mahoning and Shenango valleys, except the Ridgway Iron Works, at Youngstown, and the Wheatland mills (both rail mills), and the Reis, Brown & Berger mill, at Newcastle,

are in operation.

The Jackson Standard says the two furnaces at Jackson are going into blast, Jefnaces at Jackson are going into blast. Jefferson Furnace has several thousand tons of iron at Portland. Madison Furnace has a large pile of pig at Crossroads.

The demand for cold blast is increasing. The furnaces making cold blast have sold a

arge part of their future production, and it there will not be a pound of cold-blast metal for sale in this county.—Ironton Register.
All the glass houses in Bellaire are running.

with the exception of the window-glass works, which will start up about the 1st of September.

#### INDIANA.

The projected line of fast steamers to carry mails to all river towns between St. Louis and New Orleans has so far advanced that contracts have been signed by John H. Baldwin and associates, owners of the line, Company, and will be used to furnish the blast for the new stack, which will be put in blast in a few weeks.

Data with Billings, Powell & Co., of the American Foundry, New Albany, for all the machinery, including boilers, for the vessels. tracts will also be closed at once for six hulls, cabins and outfits. The steamers are

which were burned several years ago, are total lake shipments of ore this season up to being rebuilt by Mr. Forbes Holton. They and including August 20, together with the

From	1878.	1879. 362,272
Escanaba	- 275,767	362,272
Marquette	. 352,470	
L'Anse		323,404
Total	. 649,913	708,584
Chawing an ingresses of #9	fer tone	

The total lake shipments of ore for the reek ending August 20, from the three ports of Marquette, Escanaba and L'Anse. vere 51,458 gross to

NEVADA At Virginia City are the largest foundries
Nevada State, of which the Fulton Works is the first. It has lately cast the heaviest single casting ever made on the coast, an immense wheel of 15 tons, though one of 17 tons was soon to be cast. The work was

tons was soon to be east. The work was accessfully done. In Tuscarora is a foundry, owned by Messrs Jack, Dowe & Prout, where amalgamating pans of 31/2 tons and large retorts are cast.

The Albany Board of Lumber Dealers held a meeting on the 25th of August, to take action in regard to the advance of more than \$2 per thousand in lake and canal freights, and unanimously agreed to increase the price \$2 on all grade of pine lumber sold in the market.

paired, and 8 furnaces are now in operation—the muck bar being shipped to Johnstown.
Seven more furnaces will be started soon.
The main building is about 250 feet long by

#### The Artillery Trials At Meppen.

The very interesting series of trials just made by Krupp at Meppen, Hanover, throws much light upon the following questions which are still agitating English artillerists: Are breech-loading guns su-perior or inferior to muzzle-loaders! Of what material may a gun be most satisfactorily made, and how should it be built ! How may the maximum of power be obtained with the minimum of weight in the weapon, its projectile and its powder charge ! And, lastly, what system of gun is best for the rough usage of service, when the element of efficiency has been fully taken into consideration? The results obtained have been mathematically computed and openly dealt with, and the exact nature of the conclusions arrived at precludes the possibility of mistake. By a somewhat complicated arrangement Herr Krupp has succeeded in so closing the vent at the instant after dis-charge as to afford an absolutely perfect protection against the escape of smoke to the rear —a fact of the greatest importance to men who might be called upon to work such guns in a turret. Again, the plan of wedging obviates the chances of an accident, either in the nature of double loading or losing the entire plant in operation about the 1st of October.

The Pittsburgh Hinge Company have done

breech plug, while a much superior length of bore is attainable in these weapons, which, being loaded from the breech, do not require to be run in, and are therefore available for ships of even a comparatively small size. last year. They are now running 14 hours

a day and shipping three cars per day.

They are compelled to advertise for more strike the mind of any one who recollects for the advantages which they signify will strike the mind of any one who recollects the disaster of the Thunderer, or who is aware of the difficulty which is experienced with muzzle-loaders, that ought for many narrowness of the turret or deck upon which they may chance to be placed. As regards the material from which such ordnance may be made, it has been fairly shown again that steel fairly outrivals all competitors. True, a recent explosion of one of Krupp's guns has thrown a slur upon the ordnance he makes; but the rarity of this class of accident renders such a contrethis class of accident renders such a confre-temps the more remarkable. With respect to power of penetration obtained, an-other very serious subject is presented for investigation. According to data given, Krupp's 24-centimeter gun, weigh-ing 18 tons only, sent a chilled steel shell of 352 pounds weight, with 165 pounds of powder, through 20 inches of iron plating, and beyond it to a distance of 3250 feet. The initial velocity it imparted to the pro-The initial velocity it imparted to the projectile was 1910 feet per second, with a total energy of 8755 foot tons, or 287 tons for every inch of its circumference. The English 38-ton gun, made at Woolwich, can do lish 38-ton gun, made at Woolwich, can do but little more, fer, though it sends out a shot of 812 pounds, by means of 200 pounds of powder, with an energy of 340 foot tons per inch of circumference, it has only shown a capability of passing through three plates of 6½ inches in thickness, and has failed to pierce fully a fourth. The experiments further go to show that the Krupp gun is a handy weapon, easy to load and quick to fire, and that the work to which it has been subjected should be taken into consideration when the relative value of these and other when the relative value of these and other systems is decided upon. Such, at any rate, are some of the thoughts which the investigation just finished suggests.

Steel Rails for Canada.—The Ottawa Gasette says: A cablegram informs us that Sir Charles Tupper Las purchased 45,000 tons of steel rails, at 97/6 per ton, delivered at Montreal, for the Canadian Pacific Rail-way. In the month of June the government way. In the month of June the government advertised for tenders for 15,000 tons of 1 steel rails, to be addressed to the Canadian agency in London, and we presume that it is upon these tenders that Sir Charles Tupper has awarded the contract for 15,000, not 45,000 tons, as cabled. The rails are to be delivered at Montreal as follows: 5000 tons on October 1st; 1880; and 5000 tons on October 1st; 1880, and will be used in the construction of 100 miles of the Pacific Railway west of Winnipeg, for which the contract was recently let to Mr. Ryan, of Brockville. The price at which is if Charles Tupper has obtained the rails is remarkably low, being in currency about \$2.4.30 per ton, while the 50,000 tons purchased by Mr. Mackenzie in 1875 cost \$5.4 per ton. The fact that Sir Charles Tupper's purchase has been made for less than one-half the money that Mr. Mackenzie's transaction agency in London and so many orders in advance. We are still 100 boilers behind and 35 engines."

The business of the lines west of Pittsburgh and Erie, for the same months of 1879, shows a deficiency in meeting liabilities of \$152,020, being a gain over the same period in 1876 of \$224,025.

As an evidence of reviving industry and the stimulus imparted to all branches of enterprise by a prolific harvest, the activity of establishments like the Erie Iron Works is significant. An officer in the company writes that "the call for engines and boilers is unprecedented. We have our hands full. It is many years since we have had so small a stock of finished work on hand and so many orders in advance. We are still 100 boilers behind and 35 engines."

The demand is largely from the West, with occasional orders for export. The very latest mentioned by our informant is from Spain. Cuban trade, however, is very poor. PENNSYLVANIA.

There seems to be no foundation for the port that the Swedes Furnace is to blow a. No. 1 is in good repair, but needs new The Indianapolis rolling mill is at work on the control of the country, is not, of course, an evidence of superior ability on the part of the country that it does illustrate most what it does illustrate most forcibly is the lack of judgment displayed The following exhibits in gross tons the total lake shipments of ore this season up to and including August 20, together with the amount shipped during the corresponding period last year:

The following exhibits in gross tons the total lake shipments of ore this season up to the Pacific Railway. Mr. Mackenzie purchased nearly five years ago, on a falling market, at a time when all the evidences pointed to lower prices, a quantity of rails sufficient to cover more than twice the state of read cover more than twice the sta length of road constructed by his govern-ment, and in order to utilize the rails in some manner, shipped 11,000 tons to the ower provinces, handing over a considerable quantity to a private railway enter-prise. Sir Charles Tupper, on the other hand, has purchased rails for the length of road under contract, and which is speedily to be completed, and he purchased them at the lowest prices in many years, and at a time when the evidences point to a gradual advance in the price. It is evident that whether the government succeeds or fails in Pacific Railway, they are determined to push forward the road in a rapid and comprehensive manner.

> The best gathering of the season at the columbia Rifle Range took place last Monday, and the best score on record was then The attraction was the Sharps long range contest, and it opened with II compet itiors. The conditions were 500 yards, any rifle, 10 shots. On the first round Mr. A. G. Holcombe and Dr. S. T. G. Dudley tied on a score of 50 cut of a possible 50. Mr. Holcombe and Dr. Dudley went to the targets to shoot off the tie, both men again making ten consecutive bull's eyes. A third time these remarkable marksmen went to the targets and off the tie, both men again mak/ng ten consecutive bull's eyes. A third time these red markable marksmen went to the targets and again both made the wonderful run of 50 out of a possible 50. Both men cleaned their Removing to losses in the American trade.

ingtons, and for a fourth time proceeded to ingtons, and for a fourth time proceeded to shoot off the tie. Dudley started off with a bull. Holcombe following with the 'same luck, and on his second shot Dr. Dudley scored a center, and Holcombe caught a bull. Both men strung four more bulls, when Dudley again made a center. The total score now stood: Holcombe, 180 out of a possible 180, and Dr. Dudley 178 out of a possible 180. Holcombe, on the 37th shot, his seventh of the final tie, again scored a bull's eye. On his eight he got a center, closing his score with two bull's eyes, making in the match 199 out of a possible 200. His run of 37 consecutive bull's eyes has never been equaled, and it stands the best score on record.

Fast Atlantic Trips and the Con-sumption of Coal.—A writer in the Times, referring to recent trips across the Atlantic in little more than seven days, says: It is none the less true that there has been but a slight gain in the speed with which the paspages are made for several years past. In-deed, the regular runs on the various steam lines out of this port average little, if any, better than they did in the days of the old Collins Line. It has become a fashson to drive a new ship for the purpose of giving her a record. In this way, on the first or second voyage of the steamer, a special effort is made to make a quick passage; coal is burned with the utmost prodigality, and the vessel's coming and going is carefully advertised. The effect of this is that for advertised. The effect of this is that for years after people speak of the line and the ship as if this one speedy passage was a thing of ordinary occurrence. As a matter of fact, the steamer may never again make with muzzle-loaders, that ought for many reasons to be much longer in the tube, but cannot be so lengthened on account of the to repeat the experiment of rapid transit, unless they have an exceptionally large list of cabin passengers. The Arizona, on this quick trip, burned on an average 160 tons of coal a day. What she would burn on an of coal a day. What she would burn on an ordinary trip we have not been informed, but probably not more than half of that amount, which would be a large consumption for an ocean steamer with improved machinery. The wasteful steam packets of the past, like the Arabia and Persia, did not, when pushed to a high rate of speed, consume more than 200 tons of coal a day, and it would be but a small improvement to cut down the amount by only one-fifth. The truth is, our gain has by only one-nth. The truth is, our gain has thus far consisted in reducing the cost of an average or slow voyage. Fifteen or twenty years ago the steamers that plied across the Atlantic had a registered tonnage of less than 3000 tons, and in making a voyage of ten or eleven days' duration consumed from 1200 to 1600 tons of coal. Now a steamship of 4500 tons register can go across the Atlantic in the time mentioned, and require for fuel only 250 tons of coal. But if an attempt is made 250 tons of coal. But if an attempt is made to force these cheap-sailing vessels to a high rate of speed, it is found that they make away with almost as much coal as the old-fashioned steamships when under racing orders.

A statement of the business of all lines of the Pennsylvania Railroad Company east of Pittsburgh and Erie for July, 1879, as compared with the same mouth in 1878, shows an increase in the gross earnings of \$246,178, an increase in expenses of \$297,-621, and a decrease in net earnings of \$51,-458. The business for the first seven months of 1879, as compared with the corresponding period of 1878, shows an increase in gross earnings of \$1,203,294, an increase in the corresponding period of 1878, and and an increase in the corresponding to the corre in the gross expenses of \$759,935, and an increase in the net earnings of \$448,300. The business of the lines west of Pittsburgh and Erie, for the same months of 1879, shows a deficiency in meeting liabilities of

Cuban trade, however, is very poor Spain. A gentleman who has lived on the island 20 years said, recently, that he would not trust the best planter there. On the other hand, the Pioneer Iron Works, of Brooklyn, who are mainly in the Cuban trade, are very busy on plantation orders. R. Deeley very busy on plantation orders. R. Deeley & Co., of New York, are also engaged on boilers, pans, rollers, &c.

At Pottstown, Pa., on the 25th of August, Samuel Willauer, a member of the Town Council, was killed, and John Hoffman, Price Willauer, Wharton Bell, and a man named Boyer were fatally injured by the falling of an arch which was being removed in order to make some repairs at the blast rnace of the Pottstown Iron Company

A correspondent predicts an early revival in the industries of South Wales. that Americans are sending orders for manufactured iron of different kinds, and already the managers of the Rhymney Works have their hands full, while Messrs. Crawshay contemplate a resumption of work at Cyfarthfa.

Pi

Trouble in regard to harbor obstructions in New York has started a buzz among our local machinists in respect to dredging apparatus and other appliances for removing refuse, garbage, &c., but nothing definite has yet resulted, and the opinion is expressed that it will "all blow over."

M. Blondiaux, a prominent Belgian metal-urgist, closely identified with progress in his country, and for 33 years connected with the well-known Thy-le-Château Works, died recently.





The demand for Scroll Saws has become so large that most Hardware dealers are get

The demand for Scroll Saws has become so large that most Hardware dealers are getting in the way of keeping them.

The trade commences in early fall and lasts all winter, thus helping business in the dullest season. There is probably not a Hardware store in the land but that could sell some of these goods.

We are headquarters for hand and foot-power Saws, Saw Blades, Wood, Designs and all things pertaining to this business. The Lester Saw at \$3 and Rogers Saw at \$3 are now in universal demand. The Lester Saw consists of a Scroll Saw, Circular Saw, Drilling Attachment, Emery Wheel, Dust Blower, Turning Lathe and Tools, extra Saw Blades, Drill Points, Designs, Screw Driver, Wrench, &c. It has been greatly improved since last year, and is a very perfect machine. The Rogers Saw consists of a Scroll Saw, Drilling Attachment, Dust Blower, Designs, Drill Points, Saw Blades, Wrench, &c. The Saws are nicely boxed, without extra charge. We warrant them in all respects. They give dealers no trouble.

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No. 102 Chambers Street, NEW YORK.



ARMSTRONG'S

For Pipe and Bolts,

Have the following advantages : 1st .- The Armstrong Improved Dies can be adjusted to the variations in the size of fit

tings. 2d.—The Armstrong Dies, by reason of their peculiar cutting edge, can be worked with much less labor, and accomplish the desired results in less time, than with the solid

Die.

3d.—The Armstrong Dies have a double taper, that is, the taper at the entrance for the first few threads is greater in degree than the standard taper, which forms a lead to the Dies, causing them to start on the pipe without filing, even when there is a swell or burr, and requiring no pressure whatever to start the Dies on the pipe.

4th.—The Armstrong Dies being made in two parts instead of one (as in the solid Die), can be more perfectly constructed; the cutting edges reached more directly; the work done with greater precision and uniformity, by which they accomplish a much better result.

sult.

5th.—The Armstrong Dies can be sharpened without drawing the temper, and can be kept in good condition easier and with less expense than any other Dies ever offered to the public. A mechanic can sharpen these Dies, and is not obliged to send them to the manufacturer, as is the case with solid Dies when they become dull.

6th.—The Armstrong Dies are interchangeable in the stock, and although adjustable, the diese are made.

6th.—The Armstrong Dies are interchangeable in the stock, and athough adjustable, do not need adjusting to cut the standard size for which the dies are made. The adjusting is only done when the irregularity or variations in the fittings make it necessary. There are corresponding marks (s) on the Stock and on the Dies (s) and when these marks are brought into line the Dies will cut the standard size.

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RADIAL DRILLS. Self-feed—Large Adjustable Box Table.
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American Chilled Shot,

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We call the attention of all parties interested in Roofing, and the owners of large buildings, to the above article. It is superior to siate, cheaper, fire proof, about one-fourth the weight, lays much closer, therefore is storm proof, cannot crack, &c. Any carpenter can put them on. Send for description and Price List to Iron Clad Manufacturing Ca., 50 Greenpoint Av., Brooklyn, E. D.

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BOUTHERN PATTERN GRAIN
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All of superior quality.
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NOVEMBER 10, 1863, FEBRUARY 23, 1864, REISSUED JUNE 1, 1869, IMPROVED AUG. 1, 1877.

The back thrust when in use borne by the SHANK instead of the Handle. None genuine unless stamped "L. COES & CO."

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This Pump is intended for sprinkling Lawns, Gardens or Streets in front of houses. Is invaluable for washing windows, carriages, sprinkling liquids on trees or shrubs, or extinguishing fires. Can be used by standing it in any common tub or bucket. (See cut.)

The Pump is a double force pump with two feet rubber hose. brass nozzle and extra sprinkler attached. It is double acting and will throw a continuous stream 50 to 60 feet.

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All Styles Nuts, Washers, Ferrules and Brass Goods Generally. PLUMBERS' AND GAS FITTERS' SUPPLIES A SPECIALTY. The privilege of estimating on special articles solicited.

#### New Ocean Cables

At this time four distinct cables are in course of manufacture, or are actually being laid. Besides these are two projects for cables, one of which certainly is to be carried out within a few years. The Zulu war is now over, but its effect in hastening submarine telegraphic communication with the Cape of Good Hope, if there were noth-ing else to make it long remembered, will keep the cruel and inexcusable conflict fresh in the memories of England and Africa. in the memories of England and Africa. The work of laying the line has been delayed by various difficulties, though 1400 miles of ready-made cable were at once turned over for the purpose by the Eastern Extension Telegraph Company, which was about proceeding to the duplication of its lines to Australia. It is probable, however, that the cable is now laid as far as Zanzibar and the contract requires the complex bar, and the contract requires the comple-tion of the whole line to Aden by the end of the year.

This is the chief submarine telegraph now This is the chief submarine telegraph now in progress, and England hopes to obtain from it not only important military advantages, but also valuable commercial privileges. A notable feature of the contract is that the government, in return for an an-nual subsidy for 20 years, has the right to take possession of the line in case of war, rebellion or other emergency, and the opin-ion is expressed by London Engineering that the time is not far distant when the Indian cables, as well as the cable to the Cape, will become the property of the English nation.

The second great cable enterprise is the Pouyier-Quertier scheme for two Atlantic cables from Brest to New York. They have already been laid to the Scilly Islands, off the coast of Cornwall, which has been chosen as an intermediate landing point, with a view of competing with the existing with a view of competing with the existing Atlantic cables for English as well as Continental traffic. A short cable has lately been laid for the Russian government across the Caspian Sea, and a new cable to connect Scandinavia directly with Germany is now being submerged. Hitherto Germany has been obliged to send all her telegrams to Norway through Denmark and Sweden Norway through Denmark and Sweden which was not pleasant, considering her delicate relations with Denmark, and, therefore, she lays the line at her own cost, and all telegrams between Norway and Ger-many are to pass through it. This cable was to be down some time during the present month.

month.

Of the two projected cables, that from California by way of the Sandwich Islands to Japan and China is the more interesting and the nearest to realization. Mr. Cyrus W. Field has an exclusive concession from the government of the Sandwich Islands for the government of the Sandwich Islands for such a cable, and expects to obtain, without difficulty, similar privileges from Japan and China, since Japan has for several years been greedy of telegraphic communication, and even China has waked up to the advan-tages of the electric wires. When this line tages of the electric wires. When this line is laid it will complete the telegraphic cir-

cuit of the world, and there is every reason to expect that we shall not have long to wait to see that feat accomplished.

The other projected cable is still a matter of talk only. It is the proposition to lay a line from New York to Flores, an island of line from New York to Flores, an island of the Azores, with one connecting line from Flores to France, England, and Holland, and another from Flores to Fayal, San Miguel, and Lisbon, the whole comprising 7300 miles of cable. This, it will be seen, is a big project, and we will have to wait for its execution.

#### No Railroads for China.

The outlook for railways in China cannot, by any stretch of hope or imagination, be called encouraging. While Japan hastens called encouraging. While Japan hastens to take advantage of the lessons taught by Western civilization, even to the destruc-Western civilization, even to the destruc-tion, in some respects, of its ancient individ-uality as a nation, China spurns and dis-trusts the teachings and criticisms of the outside world, holding itself as the exem-plar of enlightenment, not a people standing in need of instruction from abroad.

Beyond a doubt the Chinese Imperial gov-ernment does not want railways, and though English contractors and engineers

ernment does not want railways, and though English contractors and engineers are eager to build them, and are able to show the great gain they would be to the empire, they talk, organize, survey and be-seech in vain. There is, it is true, a small party among the highest class of the empire who dimly appreciate the loss their country is sustaining by stubbornly keeping outside the ranks of nations controlled, in greater or less degree, by the ideas of modern civilization; but they are not an aggressive party, and their advance is likely to be slow, unless unforeseen changes occur in China. The men who are anxious to give the stolid empire the boon of a railway system understand the necessity of inflaming the ambition and overcoming the way system understand the necessity of inflaming the ambition and overcoming the timidity of this class, and they have for years been at work trying to do it. They have a strong point to urge in the manifest advantages China would gain from such a system, in the development of her remark-able mineral resources, which, during the long history of the empire, have never long history of the empire, have never yielded the wealth they proffer to the stagnant people; and they may, by persistent appeals to the selfish interest of long-headed Chinamen, be able to make an impression on them that will help along the object of their

For slow as the time has been and may be in approaching, beyond a doubt we are yet destined to see the locomotive driving through China undisturbed, and a welcome ally. But when that day comes the builders ally. But when that day comes the builders of the railways may not be from England, which has so long expected, as a matter of course, that her engineers would have the monopoly of that work in the East, but en terprising men from the United States, terprising men from the United States, which have already thrown off reliance on English mines, iron workers and engineers, and are approaching the time when they will enter the markets of the world as competitors. Already the English mining interest, one of the chief sources of the kingdom's weat's, has received a blow from

which it may never recover.

Mr. G. J. Morrison, the English engineer
of the ill-fated Woosung Railway, furnishes

to London Engineering a long and careful estimate of the railway system imperatively needed by China, and an intelligent account of the difficulties which stand in the way of its construction. It will be re-membered that some English merchants in Shanghai, with the countenance of the local authorities, and after great difficulty, succeeded in building and opening, in July, 1876, the Woosung Railway, the first rail-road in China. But the authorities of the district were changed, its chief magistrate was hostile to the line, jealousies between the native officials arose, and the matter was compromised by the sale of the line to the government, and Sen Pao Chen, the Viceroy of the province, persisted in his de-termination to clear away every trace of the

road.

This act of vandalism, assuredly, was enough to thoroughly chill, if it did not absolutely destroy, the hopes of the foreign railroad builders. In truth, it was one of the most stupid, barbarous and outrageous insults to modern civilization, and the most contemptuous disregard of Western examples of which the context in truths as a price of which the context is a price of the second with the context of the context of the second was a price of the context of th contemptuous disregard of Western examples of which the century furnishes us an instance. But Mr. Morrison is not a man easily rebuffed. He contends that, though this destruction of the Woosung Railway was a terrible blow, the circumstance that jealousies among officials had so much to do with it, goes far to make it other than a crushing one; and he does not desist from presenting arguments to the madaring presenting arguments to the mandarins which ought to convince them, though yet they seem to have gone little lower than the surface of their minds.

Unquestionably the Chinese, as he says can easily borrow money enough to con-struct railways profitably, and the business which would grow up in the empire for them as soon as superstitious objections were over-come would be enormous, and lead to the speedy development of an extensive railroad system. But the entering wedge has not yet been driven in, and Mr. Morrison is forced to confess that he has no hope of government concessions for the building of railways. Even when at length they are led up to accepting the idea of so benefiting China, the authorities will do the work themselves.

The Standard's Paris dispatch says the Edison Company have obtained permission from the government to establish telephonic mmunication between the various quarters



To the Trade :

We hereby notify the trade that on the 23d day of August, 1870, in an action in the United States Circuit Court for the Southern District of New York, between the United States Stamping Com-pany and King, Briggs & Co., of New York city, Circuit Court for the Court of the Court for the Court for

United States Circuit Court, City of New August 2, 1879.
All parties manufacturing or seiling Self-Righting Cuspadores, not made by our company, will be prosecuted forthwith.
UNITED STATES STAMPING CO., 58 and 60 Beekman St., New York.

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Plymouth, Mass. rs of Copper, Brass, and Iron Rivets; Co edes Iron, Leathered, Carpet, Lace and Gis shing, Hungarian, Trunk Ciout and Cu c. Rivets made to Order.

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fit any sack, wide or narrow, and will last a lifetime. Just the thing for the Hardware trade and Agricultural Imple ment dealers. A large discount to the trade and agents. Your or ders respectfully solicited, and agents wanted for this best selling article in the market.
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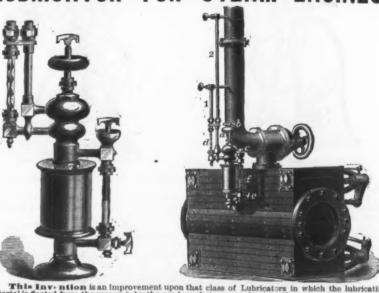
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This Inv. ntion is an improvement upon that class of Lubricators in which the lubricating material is floated from the reservoir by the condensed steam passing into the reservoir, and may be applied to all kinds of Steam Engines, by introducing the Lubricant into the steam pipe so that it thoroughly lubricates and prevents the wear of cylinder, piston, valves and rods, thereby saving oil, coal and packing, and adding greatly to the easy working of the Engine. The ultimate saving in repairs to the engine is many times greater than the cost of Lubricator. The glass tube connected with the reservoir indicates the quantity of oil in the reservoir; the upper glass tube the quantity of oil escaping. The quantity of oil admitted to the engine can be regulated with certainty. We might claim great economy of oil; that we leave with the Engineer. This invention is in practical operation, and is very highly recommended by the best engineers, and all now using it. This invention is secured by Letters Fatent of the United States, dated Sept. 26, 1871, and April 4, 1877. Information concerning the Lubricator may be obtained from our Agents, or by addressing

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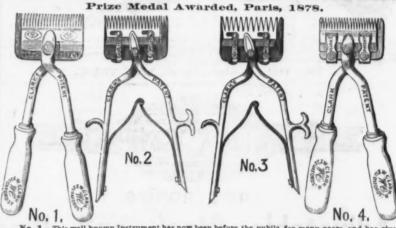
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EXAMINE PAGE 19 For the Advertisement of

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SAW CIRCULAR

OWERS Single Sowers, REAPERS,

BELMONT, Allegany Co., New York.

#### The Iron Age Directory

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	Handles, Makers of, Hartigan Wm. R., Burlington, Conn.
National Bolt and Pipe Mach. Co., Cleveland, O40 Stockwell Screw and Machine Co., Cleveland, O90 Wiley & Russell, Greenfield, Mass	Handles. Makers of. Hartigan Wm. R., Burlington, Conn
Belts (Screw.) Coleman Eagle Bolt Works, Philadelphia	Hardware Commission Merchants Fernald & Sise, too Chambers, N. Y. 7 Graham & Haines, 13; Chambers, N. Y. 8 Heaton & Denckis, 50; Commerce, Phis. 11 Hundiey & Hanks, 50; Romerce, Phis. 12 Hundiey & Hanks, 70; Reade, N. Y. 8 Tennie & Wilson, 85 Eeckman, N. Y. 8 Waibridge G. B., 10; Chambers, N. Y. 9 Whitley John R. & Co., London and Paris. 20
Boot and Shoe Heel Stiffeners. Lyon N., Albany, N. Y	Heaton & Denckia, 507 Commerce, Phisa. 11 Hundley & Hanks, 70 Reade, N. Y. 38 Samuel S. L., 52 Cedar, N. Y. 38
Brass, Manufacturers of. Ansonia Brass and Copper Co., 10 Cliff, N. V.	Tennis & Wilson, 82 Beekman, N. Y. Waibridge G. B., 103 Chambers, N. Y. Whitley John R. & Cn., London and Paris.
Tiebout W. & J., 200 Fearl, N. Y	Hardware Dealers. Lioyd, Supplee & Waiton, 625 Market, Phila25 Sheyra d Girner & C. B. Burget, N. S.
Hoimes, Booth & Haydens, 49 Chambers, N. Y. 2 Manhattan Brass Co., 83 Reade, N. Y. 2 Merchant & Co., 507 Market st., Phila 10 & 26	Shepard Sidney & Co., Buffalo, N. Y
Plume & Atwood Mfg. Co., Sc Chambers, N. Y 2 Rome Iron Works, Rome, N. Y	McCoy & Co., 134 and 130 Duane, N. Y
Waterbury Brass Co., 296 Broadway, N. Y 2 Brass Founders, Reeves Paul S., Philadelphia	Coulter, Flagler & Co., 87 Chambers, N. Y
Brick Machines. Miller S. P. & Son, 309 S. Firth. Phila	McCoy & Co., 134 and 130 Duane, N. Y
Bridge Builders, Moseley fron Bridge and Roof Co., 7 Dey, N. Y 37 Bytchey and Shae Knives, Manufacturers of	Maitby, Curtiss & Co. 24 Reade, N. Y
Butcher and Shee Knives, Manufacturers of. Wilson John, Sheffield, England	Phila. Novelty Mfg. Co., 8.1 Cherry, Phila
American Sbirai Spring Butt Co., di Beekman, N. Y. 42 Sabin Mgc. Co., Montpeller, Vt	Phila. Novelty Mfg. Co. & L. Cherry, Phila.   9
Butts and Hinges, American Solral Spring Butt Co., & Beekman, N. Y. 42 Sabin Mic. Co., Montpeller, Ve. 8 Stanley Works, New Striain. Conn. 8 Union Mig. Co., & Chambers. N. Y. 7 Carriage Balts, Makers of. Townsond, Wilson & Hubbard. Philadelphia. 31	Union Mfg. Co., 99 Chambers, N. Y
Carriage Hardware, Makers of.         6           Pim Richard P., Wilmington, Del.         6           Smith H. D. & Co., Plantsville, Conn.         12           Wilcox & Howe, Birmingham, Conn.         33	Hardware Specialties.  American Machine Co., page N. 4th. Phila
Wilcox & Howe, Birmingham, Conn	Weeks A. A 82 John, N. Y.
Car Axles. Roberts A. P. & Co., 265 S. 4th, Philadelphia 5	Harness Snaps. Covert Mfg. Co., West Troy, N. Y. Hay Knives. Holt Hiram & Co., East Wilton, Me
Casters. Phoeniz Caster Co., Indianapolis, Ind	Staniey Works, New Britain, Conn
Caulking Irons. Carver John, 266 Monroe, N. Y	Hos Ringers',   Chambers, Bering & Quinlan, Decatur, Ili
Cushman, A. F., Hartford, Conn40	Davis A. J. & Co., Newark, N. J
Clock Springs, &cc. Cary & Moen, 234 W. 20th, N. Y	Hoisting Machines.  Box Aifred & Co., 312 Green, Phila
Dunbar Bros., Bristol. Cons.  Coni, Miners of. Pardee, A. & Co., 111 Broadway, N. Y. 6 The Hoboken Coal Co., Jersey City, N. J. 6 Coal Hods. Esterbrook Wm., 111 Cherry, Phila. 12 Coal Vases. Shopard Sidney & Co., Buffalo, N. Y. 31 Coffee and Spice Mills. Lane Brothers, Millbrook, N. Y. 25 Enterprise Mfg. Co., Philadelphia, Pa. 18 Coke.	Totten & Co., Pittsburgh, Pa
Esterbrook Wm., un Cherry, Phila	Hollew Ware, W. T. Weils, 76 Beekman, N. Y
Coffee and Spice Mills. Lane Brothers, Millbrook, N. Y	Herse Clippers.  Boker, Hermann & Co., 101 & 102 Duane, N. Y
Coke. Wister Francis, 230 S. Third, Phila	Clark W., 232 Oxford, London, England
Copper. Merchant & Co., 507 Market st., Phila	Horse Nails, Makers of, Aussphe Horse Nail Co., 4 Warren, N. Y.  Bridgewater Iron Co., Bridgewater, Mass.  F Nail Co., Cleveland, O., Mational Horse Nail Co., Vergennes, Ve.  Northwestern Horse Nail Co., Chicago, Ill., 5 Saranac Horse Nail Co., Plateburg, N. Y.  Jaranac Horse Nail Co., Plateburg, N. Y.
Chambers, Bering & Quinian Decatur, Ill	Northwestern Horse Nail Co., Chicago, Ill
The Goulds Mig. Co., Seneca Fails, N. Y	Horse Shoes, Makers of.  Burden Iron Works, Troy, N. Y
Counterwink. Barber D. F. 131 Washington, Boston	Hose (Linen), Eureka Fire Hose Co 13 Barclay, N. Y
Grant Fan Mill and Cradle Co., Melrose, N. Y25 Cracibles, Manufacturers of, Wile, Siedel & Co., 70 Market, Phila	Housefurnishing Goods. Pierce Geo. N. Buffalo, N. Y
Cutlery, Importers of. Boker Hermann & Co., 101 Duane, N. Y	Hydrants, &c. McLean John, 30: Monroe, N. Y. Mchawk & Hudson Mfg. Co., Waterford, N. Y
Friedmann & Lauterjung, et Chambers, N. Y	Hydraulic Jacks. Dudgeon Richard, 24 Columbia, N. Y
Goodell Company, Antrim, N. H. 17 John Russell Cutlery Co., 90 Chambers, N. Y. 42 Marx Bros., 30 Broadway, N. Y	Ice Cream Freezers. White Mountain Freezer Co., Laconia, N. H
Corn Shellers. The Gouds Mg. Co. Seneca Fails, N. Y. The Gouds Mg. Co. Seneca Fails, N. Y. Corrugated from. Moselev Iron Bridge and Roof Co., 5 Dey, N. Y., 37 Countersink. Barbor D. F. 131 Washington, Boston	Hartford Steam Bolier Inspection & Insurance Co. 41  Iron Brokers. Boynton Geo. A., 70 Wall, N. Y. Etting Edward J., Philadelphia, Pa. 4  Hatry A. G., Pittsburgh, Pa. 4  Iron, Charconi. Warm or Cold Blast. Quincy John W. 68 William N. Y  Iron Commission Merchanus.  Balley J. F. & Co., 52 Wall, N. Y.  Lowe S. B., Chattanooga, Tenn. 5  Richardson J. O., 232 Dock, Philadelphia. 5  Wister, L. & B., 323 Walnut, Phila. 5  Iron, Pig, Importers of.
Differential Pulicy Blocks. Yale Lock Mfg. Co., 43 Chambers, N. Y	Hatry A. G., Pittsburgh, Pa. 1ren, Charcoal, Warm or Cold Blast. Quincy John W., o8 William N. V.
Haight Jos. Portchester, N. Y.  Discount Tables. Jennings S. H. 220 Front at. N. V.	Iron Commission Merchants. Bailey J. F. & Co., 52 Wall, N. Y. Lowe S. B., Cnattanoga, Tenn.
Leigh Edwd. B., St. Louis Elevator, St. Louis, Mo., 20 Door and Gate Springs, Dunne P. R., 18: Fulton, N. Y.	sichardson J. O., 232 Dock, Philadelphia
Van Wagoner & Williams, 82 Beekman, N. Y42 Door Bolts. Ives Hobart B., Fair Haven, Ct	Iron, Pig, Importers of. Swan John E. & Bro., Glasgow & Middlesbrough20 Williamson James & Co., 59 Wall, N. Y
The Lamson & Goodnow Mig. Co., 88 Chambers, N. Y.  N. Yale Lock Mig. Co., 93 Chambers, N. Y.  Dimer Pail and Lanterns.  Haight Jos. Portchester, N. Y.  Discount Tables.  Jennings S. H. 299 Front st. N. Y.  Leigh Edwd. B. St. Louis Elevator, St. Louis, Mo., 20  Door and Gate Springs.  Dunne P. R., 125 Fulton, N. Y.  Van Wagoner & Williams, 85 Beekman, N. Y.  17 Boor Belis.  Ive Hobert B., Fair Haven, Ct.  Drilling Machines, Mokera of.  Thorne, De Haven & Co., Philadelphis.  25 Wiley & Russell Mig. Co., Greenfield, Mass.  11 Drop Forgings.	Swan John E. & Bro., Glasgow & Middlesbrough., 20 Williamson James & Co., 69 Wall, N. Y.  Iron Dealers. Abeel Brothers, 190 South, N. Y. Bonnell, Botsford & Co., Youngstown, O. 4 Borden & Lovell, 70 and 71 West, N. Y. Cooney Daniel F., 88 Washington, N. Y. Harrison & Gillion, 195 to sou Water, N. Y. Hoffman J. W. & Co., 268 Fourth, Philadelphia, 5 Judson B. F., 457 and 459 Water, N. Y. Kann C., Pittsburgh, Pa. Lundberg Gustaf, 36 Kilby, Boston, Mass. Ogden & Wallace, 85, 87, 89 and 91 Elm, N. Y. Pierson & Co., 24 Broadway, N. Y. Pullman J. Wesley, Philadelphia, P. Squincy John W., 36 William, N. Y. Richards D. W. & Co., 22 Mangin, N. Y. Wathece Wm. H. & Co., 41 Dany and Washington streets, N. Y. Warner A. B. & Son, 86 and 27 West, N. Y. Worther A. B. & Son, 86 and 27 West, N. Y. Hoffman J. W. & Co., 208 Ath, Phila. Levis, Henry & Co., Philadelphia, P. Fron, Manufacturers of, Albany & Rensesless Iron & Steel Co., Troy N. Y.  Jane Manufacturers of, Albany & Rensesless Iron & Steel Co., Troy N. Y.
Prop Forgings.  Rose Wm. & Bros., West Philadelphia, Pa	Carmichael W. J., 130 and 132 Cedar, N. Y. 4 Cooney Daniel F., 88 Washington, N. Y. 4 Harrison & Gilloon, 558 to 502 Water, N. Y. 4
Drop Hammers. The Stiles & Parker Press Co., Middletown, Ct41 Drop Presses.	Judson B. F., 457 and 459 Water, N. Y
Drop Preses. Beecher & Peok. New Haven, Conn	Lundberg Gustaf, 35 Kilby, Boston, Mass. 4 Ogden & Wallace, 55, 87, 59 and 91 Elm, N. Y. 4 Fierson & Co., 24 Broadway, N. Y. 4 Pullman J. Wesley, Philiafelinhia, P. 4
Electric Machines. Weston Dynamo-Electric Machine Co., Newark,	Quincy John W., 38 William, N. Y
N. J. 39 Elevators, Makers of. Crane Bros. Mig. Co., Chicago, Ill. 9240 Stokes & Parrish, Philadelphia. 40 Elevators, Buckets.	streets, N. Y Warner A. B. & Son, 26 and 20 West, N. Y Williamson James & Co., 60 Wall, N. Y
Elevator Buckets, Rowland T. F., Brooklyn, N. Y	Whitney A. R., 48 Hudson, N. Y. 4 Irea. (Manufacturers' Agents.) Hoffman J. W. & Co., 208 S. 4th, Phila
Emery.  Jennings, S. H., 239 Front st., N. Y	Levis, Henry & Co., Philadelphia, Pa
Engines. Air. Sherrill Roper Air Engine Co., or Washington, N.Y.40 Engines, Gus.	Britton Iron and Steel Co., Cleveland, Ohio.
Englues, Gas. Schleicher, Schumm & Co., Philadelphia	Condit, Wick & Co., Cleveland, Ohio
Baldwin Locomotive Works, Philadelphia, Pa. 6	North Chicago Rolling Mill Co., Chicago, Ill. 35 Phoenix Iron Co., 410 Wainut, Philadelphia. Portsmouth Iron and Steel Co. Portsmouth Chicago
Shapley & Wells, Binghamton, N. Y. 40 Wetherill Robt. & Co., Chester, Fa., 41	Roane Iron Co., Chattanoga, Tenn
Equalizer.  Enger M. E. & Co., Indianapolis, Ind	Rowland Wm. & Harvey. Philadelphia
Jennings S. H., 239 Front st., N. Y	The Passaic Rolling Mill Co., Paterson, N. J
Export Factors, Jennings S. H., 239 Front st., N. Y. Faucets, Branss, Makers of, McNab & Harlin Mig. Co., 65 John, N. Y.  Services, Woed Faucets, Woed Fonders, Woed Fonders, Johnson, Makers of, Enterprise Mig. Co., of Pa., Phila, and N. Y.  Lane Bros., Millbrook, N. Y.  25	wason car and Foundry Co., Chattanooga, Tenn. 6 Wood Alan & Co., 510 Arch Philadelphia
Lane Bros., Milibrook, N. Y	Hoffman J. W. & Co., 26'S 4th, Phila. Levis, Henry & Co., Philadelphia, Pa. Fron, Manufacturers of. Albany & Itensesiaer Iron & Steel Co., Troy N. Y34 Bradiey, Reis & Co., New Castle, Pa. Britton Iron and Steel Co., Cleveland, Ohio

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Files, Importers at. Carr J. & Riley, 83 John, N. Y	1
Auburn File Works, 80 Chambers, N. Y. Barnett G. & H., 41 and 43 Richmond, Pnila Disston Henry & Sons, Phila	8 1
Everhart James M. Scranton. Pa.  Johnson & Bro., 1 Commercial, Newark, N. J.  McCaffrey & Bro., 12 and 1724 N. 4th. Phila.	8 1
Moss F. W., 80 John, N. Y. Files, Mansylacterers of, Auburn File Works, 8c Chambers, N. Y. Barnett G. & H., 4r and 4s Richmond, Phila. Disston Henry & Sons. Phila. Draper C. F. Sing Sing, N. Y. Everhart James M., Scranton. Pa. Johnson & Bro., I Commercial, Newark, N. J. McCaffrey & Bro., 1rys and 174 N. 4th, Phila. Nicholson File Co., Providence, R. I. 2 Paul Chas. B., Williamsburgh, N. Y. Speacer J. R. & Son, Sheffield, England. If	8 1
Paul Chas. B., Williamsburgh, N. Y. Speacer J. R. & Son, Sheffield, England	. 1
Brooklyn Clay Retort and Fire Brick Works, Van Dyke St., Brooklyn, N. Y	8
Kreischer B. & Sons, 58 Goerek, N. Y	8 1
Ostrander James & Son, 1roy, N. Y. Perth Amboy Terra Cotta Co., Perth Amboy, N. J., Valentine M. D. & Bro., Woodbridge, N. J., Watson John R. Perth Amboy, N. J.	8 8
Flint and Emery Paper and Cloth. Baeder, Adamson & Co., 730 Market, Phila Fluting Machines.	
Shepard Hardware Co., Buffalo, N. Y. Forges, Portable, &c. Empire Portable Forge Co., Cohoes, N. Y	3 7
Fossiliferous Ores.  Brown T. J. Rockwood, Tenn.	6
Foundry Facings. Paxson J. W. & Co., 514 Beech, Phila. Whitehead Bros., 517 W. 15th, N. Y. Friction Clutch.	S IN
Friction Clutch: Smith James & Co., 137 Market, Phila	
Richmond & Potts, 119 S. 4th, Phila., Pa Furniture Springs.	5 1
Furniture Springs. Carey & Meen, 24 W. 20th, N. Y. Haigh J. Lloyd, 31 John, N. Y. Galvanized Iron. Lefferts Marshall. 20 Beekman, N. Y.	2
Garden Toots. Dunlap C. W. & Co., 43 Chambers, N. Y. Enterprise Mfg. Co., Geneva, Ohio	2
Gearing. Comly J., Lincoln Park, N. J	I I
Judson Junius & Son. Rochester, N. Y.	1
Grindstones. Wood H. S. & Co., 33 West, N. Y!	i n
Kneeland F. L. (Dupont) 70 Wall, N. Y.	1 "
Handles. Makers of, Hartigan Wm. R., Burlington, Conn	8
Kidder Slide Door Hanger Co., Romeo, Mich	
Hardware Commission Merchants, Fernald & Sise, 100 Chambers, N. Y. Graham & Haines, 113 Chambers, N. Y. Heaton & Denckia, 507 Commerce, Phisa. 1. Hundley & Hanks, 70 Reade, N. Y. Steins & Wilson Code, N. Y. The Code, N. Y. Walbridge G. B., 100 Chambers, N. Y. Whitley John R. & Co., London and Paris. 2.	8
Samuel S. L., 57 Cedar, N. Y. Tennis & Wilson. 82 Beekman. N. Y. Watbridge G. B., 103 Chambers, N. Y. Whithey John B. Av. 1988.	B
Hardware Dealers. Lioyd, Supplies & Waiton, 625 Market, Phila	n
Hardware Importers.	1
Hardware Manufacturers.  Compy Jas., 4739 Paul st., Philadelphia	N IN
Coulter, Fingler & Co., 8' Chambers, N. Y	IV.
Enterprise Mfg. Co., Phila. Lloyd, Supplee & Walton, 025 Market St., Phila., Ph. 2 Maitby, Curtiss & Co. 24 Reade, N. Y.	D
Miller's ralls Co., 74 Chambers, N. Y. 2 Payso 2 & Co., 1319 W. Jackson, Chicago. 2 Phila. Novelty Mig. Co., 8.1 Cherry, Phila.	N
McCoy & Co., 134 and 130 Duane, N. Y.  Hardware Manuiacesurers, Comly Jas., 4730 Paul st., Philadelphia. Outler, Flazier & Co., 87 Chambers, N. Y. 30 Cowles Hardware Co., 03 Chambers, N. Y. 31 Day, Farrington & Co., 203 3d ave., N. Y. 42 Dibbis Mfg. Co., Trenton, N. J. 53 Enterprise Mfg. Co., Phila Lloyd, Supplee & Watton, 03 Market St., Phila, Pa.; Lloyd, Supplee & Watton, 03 Market St., Phila, Pa.; Mailby, Curtiss & Co., 32 Reade, N. Y. Miller's Falls Co., 27 Chambers, N. Y. Miller's Falls Co., 27 Chambers, N. Y. Payson & Co., 133 W. Jackson, Chicago, 36 Phila, Novelty Mfg. Co., 81 Cherry, Phila Kussell & Erwin Mfg. Co., New York, 10 Sannot Jard Son, 100 Market, Phila Sant Salt Caster Co. Boston, 101 Union Mfg. Co., 90 Chambers, N. Y. Van Wagoner & Williams, 25 Beekman, N. Y. Hardware Specialities.	
Star Salt Caster Co., Boston	N
Hardware Specialities. American Machine Co., 1925 N. 4th, Phila. Shepar' Sidney & Co., Buffalo, N. Y	N
Spencer & Undernill, of Chambers, N. Y	N
Harness Snaps. Covert Mr. Co., West Troy, N. Y. Hay Knives. Holt Hiram & Co., East Wilton, Me	N
Hinges. Staniey Works, New Britain, Conn	1 74
Hoisting Engines, Makers of. Crane Bros., Mfg. Co., Chicago, Ill. 9840 Davis A. J. & Co., Newark, N. J. 41	
Hoisting Machines.  Box Aifred & Co., 312 Green, Phila	0
Hollow Chilled Molls.	P
W. T. Wells, 78 Beekman, N. Y.	P
New York Handle & Mallet Works, 455 E. Houston, 13	P
Horse Clippers. Boker. Hermann & Co., 101 & 102 Duane, N. Y	P
Horse Nails, Makers of, Ausable Horse Nail Co., 4 Warren, N. Y. Piridgewater Iron Co., Bridgewater, Mass. 6 FF Nail Co., Cleveland, O., 30 Mational Horse Nail Co., Chicago, III. 55 Saranae Horse Nail Co., Chicago, III. 55 Saranae Horse Nail Co., Horseburg, N. Y.  January M. J.	P
Northwestern Horse Nail Co., Chicago, III	P
Horse Shoes, Makers of.  Burden Iron Works, Troy, N. Y.  Rhode Island Horse Shoe Co., Providence, R. I	P
Eureka Fire Hose Co 13 Barclay, N. Y33	P
Housefurnishing Goods. Pierce Geo. N. Buffalo, N. Y.  Hydrants, &c. McLean John, 30 Monroe, N. Y.  Mchawk & Hudson Mfg. Co., Waterford, N. Y.  29	P
Mchawk & Hudson Mfg. Co., Waterford, N. Y	P
White Mountain Freezer Co., Laconia, N. H.	
Mantford Utanya Hollan In annation & In-	L AC
Hartoru Steam Boner inspection & Insurance Co. 41  Fron Brokers.  Boynton Geo. A., 7c Wall, N. Y.  Etting Edward J., Philadelphia, Pa.  Hatry A. G., Pittsburgh, Pa.  1 ren, Charcon I. Warm or Cold Blast.  Quincy John W., 68 William N. Y.  4	
Quincy John W., 98 William N. Y. 4 Iron Commission Merchanss. Bailey J. F. & Co., 52 Wall, N. Y. 5	P
quincy Jonn w. 50 William N. Y. 4 1 Fron Commission Merchans. Bailey J. F. & Co., 52 Wall, N. Y. Lowe S. B., Chattanoga, Tenn	P
Iron, Pig, Importers of. Swan John E. & Bro., Glasgow & Middlesbrough20 Williamson James & Co., 59 Wall, N. Y	1
Abeel Brothers, 190 South, N. Y	R
Carmichael W. J., 130 and 132 Cedar, N. Y. 4 Cooney Daniel F., 88 Washington, N. Y. 4 Harrison & Gilloon, 558 to 502 Water, N. Y. 4 Hoffman J. W. & Co. 268 K Fourth, Philadelphia	7
Judson B. F., 457 and 459 Water, N. Y. Kano C., Pittsburgh, Pa. Lundberg Gustaf, 38 Kilby, Boston, Mass. 4	R
Ogden & Wallace, 85, 87, 89 and 91 Elm, N. Y. 4 Pierson & Co., 24 Broadway, N. Y. 4 Pullman J. Wesley, Philadelphia, P	1
Richards D. W. & Co., 92 Mangin, N. Y	R
Warner A. B. & Son, 28 and 20 West, N. Y. Williamson James & Co., 60 Wall, N. Y. Whitney A. R., 48 Hudson, N. Y.	R
Hoffman J. W. & Co., 208 S. 4th, Phila	R
Albany & Reis & Co., New Castle, Pa	8801
Burden Iron Works, Troy, N. Y	Sa
Leonard John, 40 and 41 West. N. Y. 4 North Chicago Rolling Mill Co., Chicago, Ill	Sa
Portsmouth Iron and Steel Co., Portsmouth, Ohio. 4 Roane Iron Co., Chattanooga, Tenn. Rome Merchant Iron Milis, Rome, N. Y	Se
Rowland Wm. & Harvey. Philadelphia	Se
Iron, Pig. Importers of. Swan John E. & Bro., Glasgow & Middlesbrough. 20 Williamson James & Co., 69 Wall, N. Y. Iron Bealers. Abeel Brothers, 190 South, N. Y. Bonnell, Botaford & Co., Youngstown, O. Borden & Lovell, 70 and 71 West, N. Y. Bonnell, Botaford & Co., Youngstown, O. Borden & Lovell, 70 and 71 West, N. Y. Bonnell, Botaford & Co., 20 St. Fourth, Philadelphia, G. Garmichael W. J., 190 and 191 West, N. Y. Hoffman, J. W. & Co. 26 St. Fourth, Philadelphia, S. Judson B. F., 437 and 450 Water, N. Y. Hoffman, J. W. & Co. 26 St. Fourth, Philadelphia, S. Judson B. F., 437 and 450 Water, N. Y. Kann C. Pittsburgh, Pa. Lundberg Gustaf, 36 Kilby, Boston, Mass. Ogden & Wallace, 86, 75, 59 and 91. Elm, N. Y. Freson & Co., 22 Broadway, N. Y. Pullman, J. Wesley, Philadelphia, P. Squincy John W., 36 William, N. Y. Hehards D. W. & Co., 50 Mangin, N. Y. Wallace W. M. & Co., 50 Mangin, N. Y. Wallace W. M. & Co., 50 Mangin, N. Y. Williamson James & Co., 69 Wall, N. Y. Fres. Manufacturers' Agents, Hoffman, J. W. & Co., 208 S. 4th, Phila. Levis, Henre & Co., Philadelphia, Pa. Hoffman, J. W. & Co., 208 S. 4th, Phila. Levis, Henre & Co., Philadelphia, Pa. Fron, Manufacturers of, Albany & Honnesselser Iron & Steel Co., Troy N. Y. Bradiey, Reis & Co., New Castle, Pa. Britton Iron and Steel Co., Cleveland, Ohio, 6 Burden Iron Works, Troy, N. Y. Albany & Honnesselser Iron & Steel Co., Troy N. Y. Shoenix Iron Co., 410 Walling, Mill Co., Pattsburgh Pa. Leonard John, 40 and 431 West, N. Y. Norn Chicago Rolling Mill Co., Chicago, Ill. Shoenberger & Co., Pittsburgh Pa. Leonard James & Co., 208 N. Delaware sve, Phila. 5 Rowland Wm. & Harvey, Philadelphia, Portsmouth Iron and Steel Co., Pittsburgh Pa. Leonard James & Co., 208 N. Delaware sve, Phila. 5 Rowland Wm. & Harvey, Philadelphia, Portsmouth, Pincand James & Co., 209 N. Delaware sve, Phila. 5 Rowland Wm. & Harvey, Philadelphia, Portsmouth, Pincand James & Co., 209 N. Delaware sve, Phila. 5 Rowland Wm. & Harvey, Philadelphia, Portsmouth, Pincand James & Co., 200 N. Delaware sve, Phi	Sc
Wood Alan & Co., 510 Arch Philadelphia	Se

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Jack Screws. Wynn, R. D., Windsor, Vt	
Jack Screws. Wynn, R. D., Windsor, Vt	8
Howard & Morse, 45 Fulton, N. Y 2	8
Johnson, Jr. Israel H. & Co., Philadelphia37 Leveling Instruments. Bicknell & Comstock, 27 Warren, N. Y38	20 00
Disston Henry & Sons., Philadelphia29	E E
Bonannan wilson, Broadway and Rossuth, Brook.  10 Hyn, E. H. Harden, J. 10 S. Stn. Philadelohia.  11 Richard & Wolf, In S. Stn. Philadelohia.  12 Richard & Wolf, In S. Stn. Philadelohia.  13 Richard & Egge Mg. Co., Bridgeport, Conn.  14 Vale Lock Mfg. Co., 53 Chambers, N. Y.  15 Lubricator.	
Smith & Egge Mfg. Co., Bridgeport, Conn. 8 Yale Lock Mfg. Co., 53 Chambers, N. Y. 3 Lubricator. 95	00
Lubricator	8
Cooke Wm., 6 Cordandt, N. Y	30 30
Landis Exts F. Lancaster, Pa.  Landis Exts F. Lancaster, Pa.  B. H. Flanders Machine Works, 102* Hamilton.  Thila.  Thila.  Thila.  S. C. & Co., Manchester, N. H.  Garvin E. E. & Co., 190 Center, N. Y.  Monawk & Hudson Mig. Co., Waterford, N. Y.  Pratt & Whitney Co., Pittaburgh, Pa.  41  Pratt & Whitney Co., Hartford, Conn.  Sellers Wm. & Co., Chest, Co.  The Stiles & Parker Press Co., Middietown, Ut.  Wetherfil Robert & Co., Chester, Pa.  41  Machinery (Harnes's Foot Power.)  Little Chas, E., 95 Fulton, N.  Machine Serews, Makers of.  Hartford, Conn.  22  Ellowis Jan., Williamsburg, N. Y.  Machiners' Tools.  Blaisdell P. & Co., Worcester, Mass.  40  Bullard, E. P., 44 bey, N. Y.  Cooke Wm., 6 Cortlandt, N. Y.  The Goo, Place Machinery Agency, 121 Chambers,  N. Y.  Hartmigton E. & Son. 15th st. and Ponnsylvania	-
Monawk & Hudson Mfg. Co., Waterford, N. Y 29 Pittsburgh Mfg. Co., Pittsburgh, Pa 41 Pratt & Whitney Co., Hartford, Conn 40	8
Sellers Wm. & Co., 1600 Hamilton, Philadelphia 41 The Stiles & Paræer Press Co., Middetown, Ut41 Wetherill Robert & Co., Chester, Pa41	8
Little Chas. E., 9 Fulton, N. Y	
Fellows John. Williamsburg. N. Y	s
Bilaisdell P. & Co., Worcester, Mass	8
N. Y. Harrington E. & Son, 15th st. and Pennsylvania ave, Philadelphia, Pa. King J. M. & Co., Waterford, N. Y.  6	
King J. M. & Co., Waterford, N. Y. 6 Wells Bros. Greenfield Mass. 40 Maileable Iron Castings, Makers of. Hammer & Co., Branford, Conn. 38	B
N. Y. Handle and Mallet Works, 456 E. Houston13	
Mechanics' Tools, Jennings C. & Co., 98 Chambers, N. Y	8 8
Eddy Geo. M. & Co., 343 Classon Ave., Brooklyn, N.Y.29  Ment Chopping Machinery.  Murray Iron Works, Burlington, Iowa	
Sliver & Deming Mig. Co., Salem, O	
Dickerson, Van Dusen & Co., 20 and 31 Cliff. N. Y 2 Graves O. W. & Co., cor. Cliff. and Beekman. N. Y. 4 Phelps, Dodge & Co., Cliff. bet. John & Fulton, N. Y. 2 Phosphor Bronze Smelting Co., 2038 Washington 8v., Phila.	
Phosphor Bronze Smelting Co., 2039 Washington sv., Phila	
Starr John. Halifax, Nova Scotia. 4 Metallic Shingles. 1 Ironclad Manufacturing Co., Brooklyn, N. Y	8
Booth, Garrett & Blair, 939 Chant, Philadelphia 5 Britton J. Biodgett, 339 Walnut, Philadelphia 5	8
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Chester Blos & Porcelain Co., 87 Liberty, N. Y 29 Mill Gearing. Poole & Hunt, Baltimore. Mincing Knives. Philadelphia Novelty Mfg. Co., 821 Cherry, Phila., 9 Miners' Candles, Makers of. James Boyd's Sons, 10 and 12 Franklin, N. Y 6 Mineral Wool. Elbers Alexander D., 26% Broadway, N. Y 8 Molding Sand.	8
James Boyd's Sons, 10 and 12 Franklin, N. Y 6 Mineral Wool. Elbers Alexander D., 26% Broadway, N. Y 8	30
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Waitenead Bross, 5; W. 14th, N. Y. 4  Mouse Traps.  Diets R. E., 5; and 6 Fulton, N. Y. 42  A. Flunt Mrg. Co., Cincinnati, O. 55  A. Flunt Mrg. Co., Cincinnati, O. 55  Ripley Mrg. Co., Unionville, Conn. 8  Natis. 8	
Oxford Iron Co., 81 Washington, N. Y	=
Zug & Co. Pittsburgh, Pa. 4 Nail Machinery. Pittsburgh Mg. Co., Pittsburgh, Pa. 41	
Nickel Platers. Carter Edw. 22 Spring av., Troy, N. Y	
Schoenberger & Co., Pittsburgh, Pa	ı
Interchangeable Tool Co., of New York	ı
Howland Wm. & Harvey, Frankford, Philadelphia. 42  Note Broker, Gallaudet P. W., 3 and 5 Wall, N. Y.  Nuts. Botis. etc., Makers of. Allentown Rolling Mill Co., Allentown, Pa 5  Haskell W. H. & Co., Pawtucket, R. I	l
Attentown Rolling Mill Co., Allentown, Pa. 4 Haskell W. H. & Co., Pawtucket, R. I. 29 Russell, Birdsall & Ward, Port Chester, N. Y. 42 Standard Nut Co., Pittshursh, Pa.	
Boyd & Chase with and Harlem River W V	
Chester Iron Co., 407 Walnut, Philadelphia	
Paint. Lake Superior Paint Co., Cleveland, Ohio	
Lake Superior Paint Co., Cleveland, Ohio. 8 Papyrographs. The Fapyrograph Co., Norwich, Conn. 26 Patent Solicitors. Howson & Son. Phila. and Washington, D. C. 8 Stetson Thomas D., 23 Murray, N. Y. 8 Tracy Geo. C. & Co., Cleveland, O. 8 Peus. Steel.	0
Phosphor Bronze	-
Esterbrook Steel Pen Co., New York.  Phosphor Bronze Smelting Co., 2058 Washington ave., Phisadelphia	1
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Pipe. Water and das, Makers of. McNeals & Archer, Burlington, N. J. 6 Wood R. D. & Co., 400 Chestnut. Philadelphia	r
Plane Irons, Manufacturers of. Buck Bros., Milbury, Mass	I
Plated Ware,         Hall, Elton & Co., 75 Chambers, N. Y.         16           Wm. Rogers Mg. Co., Hartford, Ct.         17	I
Plumbers' Materials, Manufacturers of. Carr Wm. S. & Co., 106 Center, N. Y	I
Columbia Plow Works, Copake Iron Works, N. Y26 Pocket K nives. Boker Herman & Co., 101 Duane, N. Y35	١
Columbia Plow Works, Copake Iron Works, N. Y26 Pocket K. nives. Boker Hermann & Co 101 Duane, N. Y	1
Merriman A. H., West Meriden, Conn. 41 Peerless Punch & Shear Co., 52 Dey, N. Y. 40 The Stilles & Parker Press Co., Middletown, Ct. 41	1
Pulleys.       Brown A. & F., 57 Lewis, N. Y.     41       Oesterline W., Cincinnati, Ohio.     7       Promidel Block Works, Lockport, N. Y.     20       Providence Tool Co., Providence, R. I.     88	ı
Providence Tool Co., Providence, R. I	
Providence Tool Co. Providence, R. I	1
Union Mig. Co., 98 Chambers, N. Y	l
Cleveland Bottling Mill Co., Cleveland, Ohio	l
THE EURAL THOMSOM SPECT CO., ST DIOGGWAY, N. 1 35 1	١
Rivets. Gilmor Wm., of Wm., Baltimore, Md	l
Rock Drills. Weaver W., Phoenixville, Pa	A
Dubois M. N., 821 Cherry, Philadelphia	So.
Rules, Manufacturers of Stanley Rule and Level Co., 20 Chambers, N. Y16	ms sti
Enterprise Mfg. Co., Philadelphia18	hai
Reeder Adamson & Co am Market Philadelphia	
Saws, Makers of.  American Saw Co., Trenton. N. J	Go
Kimball & Kimball, 639 Arch, Philadelphia	
Scales. Manufacturers of. Chatillon John & Sons, or Cliff, N. Y	De
Screws. Makers of. Miles F. &. 25 Quarry, Phils	
Borew Drivers, (Improved) Makers of. Disston Henry & Sons, Phila	C

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Beardslev Scythe Co West Winsted, Conn33	Taps and Dies. Carpenter J. M., Pawtucket, R. L
Cythe Stones.  Pike A. F., Rast Haverhill, N. H	Manning H. S. & Co., III Liberty, N. Y
hears (Sheep).	Tea Pots.
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bears, Iron.	N & G Taylor Co Philadelphia
Cleveland Hardware Co., Cleveland, Ohio41	Tin Plate, Manufacturers or. Monitor Tin Plate Works, 54 Cliff, N. Y
hot. &c. Sparks Thos. W., 121 Walnut, Philadelphia25 hovels. Spades and Scoops.	Monitor Tin Plate Works, 54 Cliff, N. Y 3
Hussev, Binns & Co., Pittsburgh, Pa32	Tin Ware, Stamped and Japanned
novels, Spades and Scoops.  Gussev, Bluns & Co., Pittsburgh, Pa	Tin Ware, Stamped and Japanned Shepard Sidney & Co., Buffalo, N. Y31
melting Works.  Philadelphia Smelting Co., 12th and Noble sts.,  Philadelphia. , 35  Reeves Paul S., 750 South Broad, Phila. , 27  asths. , 27	Tire Upsetters. Little Giant Mfg. Co., Millport, N. Y
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Vermont Snath Co., Springfield, Vt36 penking Tubes. Datrander W. R., 19 Ann. N. Y	Chater R. Dundas, 187 Pearl, N. Y
Ostrander W. R., 19 Ann. N. Y33	Maria and the second se
	Bruce Geo. W., 1 Platt, New York. 65 Fry Squares, Bevels, &c., Makers of, Disston Henry & Sons, Phila. 97 Tube Expanders, Dudgeon Richard, 24 Columbia, N. Y. 9
Manning & Squier, 113 Liberty, N. Y 2 Osgood F. & Co., Bergen Port, N. J	Disston Henry & Sons, Phita
Wm. Rogers Mfg. Co., Hartford, Ct	Dudgeon Richard. 24 Columbia, N. Y 9
prings. Carey & Moen, 234 W. 29th, N. Y. Gautier Steel Co., Ld., Johnstown, Pa. 2&34 Rowland Wm. & Harvey, Frankford, Phila. 42	Tubing. Merchant & Co., 507 Market, Phila
Gautier Steel Co., Ld., Johnstown, Pa 2&34	Merchant & Co., 507 Market, Phila
team Boilers.	Uphotsterers' Goods.
Babcock & Wilcox, 30 Cortlandt, N. Y 40	Turner & Seymour Mfg. Co. St Reade, N. Y
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Ramsay H. A. & Co., Baltimore, Md27	West Reading Pipe and Mach. Works, Reading, Pa 41
Chester Steel Castings Co., Evelina, Phila., Pa42	Weather Strips. Bracher Ventilator Co., 3 Park Row, N. Y 29
Jautier Steel Co., Ld., Johnstown, Pa. 284, 264 Mw. & Harvey, Frankford, Phila. 42 eam Bollers. Babcock & Wilcox, 30 Cortlandt, N. Y. 40 Lealle Boller Works, Jersey City, N. J. 25 team Hammers, &c., Makers of. Dudgeon Richard, 24 Columbia, N. Y. 40 Leam Fumps, &c., Manufacturers of. 25 team Framps, &c., Manufacturers of. 25 team Framps, &c., Manufacturers of. 26 Lawton Steam Fump Works, 14 and 16 Water st. Brooklyn, N. 40 Layton Steam Fump Works, 14 and 16 Water st. Brooklyn, N. 40 Chayton Steam Fump Works, 14 and 16 Water st. Brooklyn, N. 40 Co., Chickinnati, O. 40 Kerner St. Market Co., Chickinnati, O. 41 Storer St. Works, M. 40 Co., Chickinnati, O. 41 Storer St. Works, Manufacturers of. Chester Steel Castings, Manufacturers of. Chester Steel Castings Co., Evelina, Phila. 42 Flags Stanley G. & Co., 26 and 28 N. 3d, Phila. 42 Pittsburgh Steel Casting Co., Pittsburgh, Pa. 42 Pittsburgh Steel Casting Co., Pittsburgh Pa. 42 Pittsburgh Steel Casting Co., Pittsburgh Pa. 42	Wheels, Railroad, Whitney A. & Sons, Philadelphia
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rrait & Letchworth, Burnalo, N. Y. 42   ceel   Importers.     Carr J. & Riley, 85 John, N. Y. 34   Hobson Francis & Son, or John, N. Y. 34   McCoy & Co., 134 and 135 Duane, N. Y. 15   Moss r. W., 85 John, N. Y. 34   Pierson & Co., 24 Broadway, N. Y. 4   Wolff R. H. & Co., 16 (Liff, N. Y. 34   ceel (Mushet's Special.)     Randali & Jones, 10 Oliver, Boston, Mass. 34   Randali & Jones, 10 Oliver, Boston, Mass. 34	Colgate Robert & Co., 287 Pearl, N. Y
Carr J. & Riley, 82 John, N. Y	Jewett John & Sons, 182 Front, N. Y
McCoy & Co., 134 and 130 Duane, N. Y	Lewis John T. & Bros., 231 S. Front, Phila., Pa28
Plerson & Co., 24 Broadway, N. Y.	Lewis John T. & Bros. 231 S. Front, Phila. Ps28 Window Baiances. Hugunin Robt. B., Wethersfield, Conn
Wolff R. H. & Co., 16 Cliff, N. Y	Hammond W. S., Lewisberry, Pa
Bandall & Jones, o Oliver, Boston, Mass, etc Manufacturers, albany & Rensselaer Iron & Steel Co., Troy, N. Y., 44 Atha, Benjamin & Co., 241 Pearl, N. Y. 46 Cleveland Rolling Mill Co., Cleveland, Od., 46 Forest City Steel Co., Cleveland, Ohio. 47 Gautier Steel Co., Ld., Johnstown, Pa. 48 Midvale Steel Works, Nicetown, Phila, Pa. 48 Midvale Steel Works, Nicetown, Phila, Pa. 49 Miller, Metcall & Parkin, Pittsburgh. 49 Fennsylvania Steel Co., 68 S., 4th, Phila. 42 Sanderson Geo. & Co., 35 Gold, N. M. 47 Phila. 42 Sanderson Geo. & Co., 35 Gold, N. M. 48 Singer, Nimick & Co., Pittsburgh, Pa. 48 Singer, Nimick & Co., Pittsburgh, Pa. 49 Singer, Nimick & Co., Pittsburgh, Pa. 49 Standard Steel Works, Philadelphia, Pa. 16 Standard Steel Works, Philadelphia, Pa. 16 Standard Steel Works, Philadelphia, Pa. 17 Fite Edgar Thomson Steel Co., 53 Fondaway, N. Y., 35 Wardlow S. & C., Shemeld, England. 24 Iceliuse.	Hammond W. S. Lewisberry, Pa. 36 Wire, Manufacturers of. Cary & Moch. 24 W. 25th. N. Y. Cleveland Rolling Mill Co., Cleveland, Ohlo. 36 Gauther Steel Co., Ld., Johnstown, Fa. 36 J. 10 Gauther Steel Co., Ld., Johnstown, Fa. 36 J. 10 Gauther Steel Co., Ld., Johnstown, Fa. 36 J. 10 Gauther Steel Co., Ld., Johnstown, Fa. 36 J. 10 Gauther Steel Co., John M. Y. 37 J. 10 Griswold J. Wool, Troy, N. 77 J. 10 Griswold J. Wool, Troy, N. 78 J. 11 Griswold J. Wool, Troy, N. 79 J. 11 Griswold J. Wool, Troy, N. 79 J. 11 Griswold J. Wool, John M. 79 J. 12 Griswold J. Wool, John M. 79 J. 12 Griswold J. Wool, J. 10 J. 12 Griswold J. Wool, J. 10 J. 12 Griswold J. 10 J. 1
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tocks and Dies.	HP. Nail Co., Cleveland, Ohio 36
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Shepard Sidney & Co., Buffalo, N. Y 31	Girard Wrench Mfg. Co., Girard, Pa 6
ove Trucks. Fucker Alarm Till Mfg. Co., Indianapolia, Ind16	Wringers.
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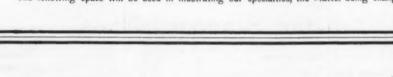
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(No. 235.)

#### INTERNATIONAL EXHIBITION. PHILADELPHIA, 1876.



The United States Centennial Commission has examined the report of the Judges, and accepted the following reasons, and decreed an award in conformity therewith.



PHILADELPHIA, May 4th, 1877.

#### REPORT ON AWARDS.

Product, Files and Rasps.

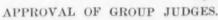
Name and Address of Exhibitor, Nicholson File Company,

-Providence, Rhode Island.

The undersigned, having examined the product herein described, respectfully recommends the same to the United States Centennial Commission for Award for the following reasons, viz:

Being exceedingly well cut and of excellent material.

Daniel Steinmetz, of Pha. Signature of the Judge.



J. D. Imboden, Chas. Staples, Jr., " Portland, Me. G. L. Reed.

of Richmond, Va.

J. Diefenbach,

" Clearfield, Pa. " Germany. David McHardy, " Great Britain.

A true Copy of the record.

Francis A. Walker, Chief of the Bureau of Awards.

Given by authority of the United States Centennial Commission. A. T. Goshorn, DirectorGeneral J. R. Hawley.
President.

J. L. Campbell,

Scal.

(21)



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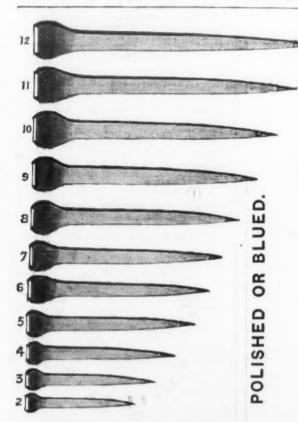
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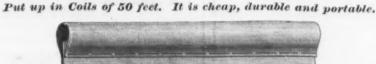
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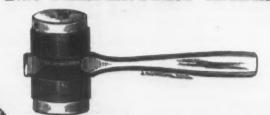
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HARDWARE.	WROUGHT IRON. Lt. Narrow	Breast, Wilson's	dis 20 g Wrought Strap and T, list Dec. 20, 77dis 60&10 lis 20 g Plate Hinges	9 % U. S. Navy ※ 15 8 3 Navv ※ 15 7 9
	Lt. Narrow. Hroad Loose Joint, Broad Fable Butts, Back Flaps, &c	Bartholomew'seach, \$2.50 dis Ratchef, Merriti's	1618 30 5 Heavy Welded Hook [8 to 12 in., 14 c c dis 30 5 Heavy Welded Hook [8 to 12 in., 11 c c dis 30 5 Heavy Welded Hook [8 to 12 in., 11 c c dis 30 5 Heavy Welded Hook [8 to 12 in., 11 c c dis 30 5 Heavy Welded Hook [8 to 12 in., 11 c c dis 30 5 Heavy Welded Hook]	S Brass and Copperdis ss
mitage's Mouse Hole 9½ @ 9½c	Inside Blind, Regular	5 % Weston's  Moore's Triple Actiondis ac Whitney's Hand Drill	118 3 2 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8  118 3 0 8	Matienble (Hammer's)   dos scoo, dis so Prior's Patent or 'Paragon," Zuc
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Socket Scratch	dis 45&t late and Shallow Socket	60 % Fluting Machines.	h net Modium and Heavy	Vaughan't Post Hole  6 in, \$25,60 ; 7, 8 and 9 in, \$25, per dos.  \$4,00 each, dis 25, Leed's.  \$5,00 each, dis 45 Eureka.  Fonts Parers. &c.
				Points Parers. &c.  Bay State  Saratogs Peeler and Slicer # dos \$13.00 dis to \$  Pruning Hooks and Shears.  Pruning Hook and Shears.
Sea. Light. Med. Heavy.  Jones & Co\$8.00 \$8.50 \$9.00 \$\text{\$\text{dis net.}}\$ Tricks \$1,50 \$1,50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.50 \$1.	rgent's	45c Eagie, 3½-înch Roll. \$1.62½ eac 45c \$2.12½ eac 45c Eureka, No. 1, 7-înch Roll. 6.50 each, dis	B net het het het het het het het het het h	Disston's Combined Pruning Hook and Saw Disston's Combined Pruning Hook and Saw Pruning Hook 11.40, dis 20 5 Pruning Shears 2 dos \$4.50@\$4.00 net
tes. non (Guy C. Hotchkiss, Field & Co.)	" 7-10-2.	\$\frac{1}{2}\$ \text{No. 2} \$\frac{1}{2}\$ s-inch Roll	335 5 Duniap's Ring Picks	Pruning Shears 4 doz \$4.50@\$4.50@\$4.50@\$4.50 net Pulleys Judd's Axle 40 4 0 4 0 5 0, to, dis 40 5 4 0 4 0 6 0 6 0 6 0 6 0 6 0 6 0 6 0 6 0
la Green.  It Spring Balances	dvanized Pump Chain	0 \$ Domestic Fluter	n net les mailes Pick in Handle \$\pi\$ dos 3.00 net \$20\bar{\beta}\$. Ice Axes, Small Castor Maileable \$\pi\$ dos 2.20 net Kitchen ice Tongs \$\pi\$ dos 2.25 net	Willey   Greats   Willey   W
1, Light Brass	ue₩ gross god t	net   Combined Fluter and Sad fron # dog 15.00, di	8 30 5 Drang tempor then as inches	" "F" Common and Pat. Busheddis 25 %
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' Sarcent's new list dis solve s	nged Firmers extra. dis a successful distribution distr	Chapin's dis code  Wire dis Smith's Patent & doz \$18.00, dis	Por. Jap'd Same discounts as Door Locks.	Rakes. dis 15 % % % % % % % % % % % % % % % % % %
Sargent's new listdis 20210 %	Adjustable, Gray'sdis a	Bee "Gimlets	Furniture, Plain	Malleable
1	"Hammer's dis ri Cabinet, Sargent's dis costrokters dis costrokters Carriace Makora', Sargent's dis costrokters Cord and Tape (2. & S. Mig. Co.). dis costrokters	Double Cus Shepardson's dis 4cd  Hartwell's dis  '' Houglass' dis  '' Douglass' dis	Hemacite Picture. dis 35 % Shutter, Porcelain. dis coaroate 3	Razor Straps.  Genuine Emerson
smiths', Commondis 45 %	rway or Bestdis fody	Glue Pers	** Heading	Evans'   dis 40 s   mitation Emerson   # dos \$1.75, dis 40 s   5   mitation Emerson   # dos \$2.75, dis 40 s   5   mitation Emerson   # dos \$2.75, dis 40 s   5   mitation Emerson   # dos \$3.75, dis 40 s   5   mitation Emerson   # dos \$3.75, dis 40 s   5   mitation Emerson   # dos \$3.75, dis 40 s   5   mitation Emerson   # dos \$3.75, dis 40 s   5   mitation Emerson   # dos \$3.75, dis 40 s   5   mitation Emerson   # dos \$3.75, dis 40 s   5   mitation Emerson   # dos \$3.75, dis 40 s   5   mitation Emerson   # dos \$3.75, dis 40 s   5   mitation Emerson   # dos \$3.75, dis 40 s   5   mitation Emerson   # dos \$3.75, dis 40 s   5   mitation Emerson   # dos \$3.75, dis 40 s   5   mitation Emerson   # dos \$3.75, dis 40 s   5   mitation Emerson   # dos \$3.75, dis 40 s   5   mitation Emerson   # dos \$3.75, dis 40 s   5   mitation Emerson   # dos \$3.75, dis 40 s   5   mitation Emerson   # dos \$3.75, dis 40 s   5   mitation Emerson   # dos \$3.75, dis 40 s   5   mitation Emerson   # dos \$3.75, dis 40 s   5   mitation Emerson   # dos \$3.75, dis 40 s   5   mitation Emerson   # dos \$3.75, dis 40 s   5   mitation Emerson   # dos \$3.75, dis 40 s   5   mitation Emerson   # dos \$3.75, dis 40 s   5   mitation Emerson   # dos \$3.75, dis 40 s   5   mitation Emerson   # dos \$3.75, dis 40 s   5   mitation Emerson   # dos \$3.75, dis 40 s   5   mitation Emerson   # dos \$3.75, dis 40 s   5   mitation Emerson   # dos \$3.75, dis 40 s   5   mitation Emerson   # dos \$3.75, dis 40 s   5   mitation Emerson   # dos \$3.75, dis 40 s   5   mitation Emerson   # dos \$3.75, dis 40 s   5   mitation Emerson   # dos \$3.75, dis 40 s   5   mitation Emerson   # dos \$3.75, dis 40 s   5   mitation Emerson   # dos \$3.75, dis 40 s   5   mitation Emerson   # dos \$3.75, dis 40 s   5   mitation Emerson   # dos \$3.75, dis 40 s   5   mitation Emerson   # dos \$3.75, dis 40 s   5   mitation Emerson   # dos \$3.75, dis 40 s   5   mitation Emerson   # dos \$3.75, dis 40 s   5   mitation Emerson   # dos \$3.75, dis 40 s   5   mitation Emerson   # dos \$3.75, dis 40 s   5   mit
ers dis 25 %	ockeyes1% in., 28c.; 1% inch, 33c.; 1% in., 37c, n locks. Brass. dis 4c	et Grindstone Fixtures.  Grangent's Patent		Torrey'sdis 25 be
Holders.	obe dis 45  din Bibbs dis 45  and Beer dis 50  coffee Mills.	Haydole's, New List of Dec. 10th, 1878dis	15 \$ Vankee dis tokto \$	tron and Tinned
nal doz \$24.00—dis 40 5 [no	ard and Box	S H. Hammondsdis	20 1 Police Small 87 to: Med. 80.00: Large \$1200. dispositos	10 bills   16 vers and 5 sat   50 sec   50 sec   50 sec     10 copper Rivets and 5 sec   50 sec   50 sec   50 sec     10 sec   50 sec   50 sec   50 sec   50 sec   50 sec     11 copper   50 sec   50 sec   50 sec   50 sec   50 sec     12 sec   50 sec   50 sec   50 sec   50 sec     13 sec   50 sec   50 sec   50 sec   50 sec   50 sec   50 sec     13 sec   50 sec
a Acastonore - Mackroll's die set l'u-	nerican (Enterprise Mrg. Co.)	Hand Cuffs and Leg from.	Duniap's improved & doz \$4.00 net	Stair
nan'snew list net ell's	ompasses, Dividers, &c. dis socio	Handles.—Door or Thump Latches—	Forcetain Lined.   \$\psi\$ dos \$\psi_0.0054, \cdot \text{not}\$ of \$\frac{1}{2}\$ for \$\psi_0.0054, \cdot \text{not}\$ of \$	Relieva   Sarp Bore   Sarp B
% in	Hipers. dis 50&20 riders. dis 50&20 riders. dis 50&20 Compasses & Callipers. dis 50&20 Wing & Inside or Outside dis 50&2		10 > 67.4% Linen dis 14210 5 net Mason's Linen dis 252.07 dis 14210 5 net Wire Clothes, Galvanized each 30 @ 40c net	Manife
Wrot. Iron Com. bushed,dis 35 5	" Wing & Inside or Outside.dis 50&5 " Double	Barn Door per doz \$5.00 dis 70%10%	Necks and Latches, according to the Latches, and Latches, according to the Latches, according to	" Lath Yarn # 14 C " Hay Rope # 13 C Steal # 14 C
R. & L. Co., Rope and Iron Strap'd. dis 35% Mil	ler's Patentdis 25	Lifting	10 % Barnes & Deits dis 30 % 10 % Trunk dis 30 % 10 % Trunk dis 30 % 10 % 10 % 10 % 10 % 10 % 10 % 10 %	"Hay Rope. Haites. Boxwood Ivory. Chapitr's. dis 70 (dis 60
	diey'sdis 15 @ 20 JorkscrewsHiumason & Bdis 40 JorkscrewsHiumason & Bdis 40 Jorn Knives and CuttersHradiey'sdis 10 daworth'sdis 334		20 % No. 5½ to 13	Chapit's.   dis 70   dis 60   &to 50
Square dis foat stantey's list dis 65 % Iron Brass Knob. dis 65 % Iron	n, Steel Points	(c Apple " assorted, " 5.00   assorted, " 6.00	"Shepardson" or "U. S."	Cad frons.
Comb Discontinuity of the Control of	######################################	File, assorted gross 2.75	is Plate dis 33/46/22 % F. Many's "Extension Cylinder" \$10.50 W dos, net DUOR LOCKS, &c. Branferd dis 60&10&2 %	Self Heating
"Plated K nob & Slide Flush "dis 50&10 T Hot ge and Tire, Common	chktes, Novetty		Norwalk	Mrs. Pott's Pat. Cold Handle, "Crown"dis 33½ % Combined Fluter and Sad Iron. per doz \$15.00, dis 15 % Sand Paper- Raeder & Adamson's Flint. 00 to 146\$2.25 @ ream }
Philadelphia dis 70% Sul Coleman dis 60&10@ 60&20% Shelton's fold list/ dis 70&5% Wh	orence. dis so rence, with detachable Mane Comb. dis 37% bber. do so	Barn Doordis 70&:	Reading Hardware Codis 35&10&2 %	Sand Paper   Baeder & Adamson's Flint, oo to 1½. \$4.25 \pi ream   dis   2.25 \pi 3. 4.75 \pi ream   dis   2.25 \pi 3. 4.75 \pi ream   2.5 \
u. Screw Co.'s, Phila	dden Cutlery Co (Table)	Challenge. dissociated to the control of the contro		New England, same list as B. & A. Flint dis 20&25 % Gage's dis 20&5 % Sash Cord.
11   12   13   14   15   15   15   15   15   15   15	Miller Bro. 's Cutlery Co	Airness Snaps. Henshaw's. List of 1½ changed to 14.00, dis 5  Fitch's (Bristol) 14.00, dis 6  Fitch's (Bristol) 14.00, dis 6  Hotchkiss'.	Romer's   dis 30 %	Sash Cords
e, List of July 15, '79	therdis 30	Andrews' dis Sargent's dis 66%&:	Penn Lock Works	Patent
ng Machines. Upright. Angular. uality, no Augers \$5.00 \$6.75 dis 45&10 \$8.00 with Augers \$5.00 10.25 dis 45&10 \$9.00	Rod₩ doz \$1.75 ne Rod₩ doz \$1.65, ne Rod₩ doz \$1.60, ne	t Covert		Sash Locks.       Clark's, No. 1, \$10.00; No. 2, \$8.00 per gross
TO Aurers 2.75 3.50 net. No. 10.00 dis 40 % N	D. 1, Large, Japanned	Claw, Nos. 1 2 3 doz 7.75 8.50 9.2 Lathing. Nos. 1 2 3 doz 7.75 8.00 8.00	\$\frac{1}{5}\$ \\ \frac{1}{5}\$	Walker's
2.75   3.50 net	Allenge (Coll)	Hunt'sdis 20 &t Shingling, Nos. 1 2 3 \$\forall \doz \empty \cdox	0 s woodruir s(r. S. & w. W. S.	Hammond's Window Springs.  Northup Window Springs.  \$0,00 per gross, dis 10 \$ The Perfect, Clark & Smith, Plain Jap'd \$7 gro \$10,00 net  "Por Knob Jap'd, \$7 gro \$1,00 net  "Nickel-Plated \$7 gro 27,00 net  Sash Weights.—\$50 did Eves \$7 b 14 \$6 1560  Sansange Stuffers or Fillers.  # dos \$20, dis 20 \$ Perry \$4 dos, No. 1, \$15; No. 0, \$21, dis 20 \$5 Enterprise Mfg. Co dis 20 \$5 Enterprise Mfg. Co dis 20 \$5 Elverprise Mfg. Co di
tent Braces dis \$5(@55210 \$ n Ball (American). dis 50 \$ Prei	nium (Coll)— Nos. 1 2 3 panned \$\ \text{doz \$7.50} \ \text{doz } \text{87.50} \ \text{coc} \text{dis 30 9} \text{dis 30 9}	Hurd's dis 3 dis 4 doz 85.00 \$8 50 \$0.00 Claw, Nos. 1 2 3. \$\forall doz 85.00 \$8 50 \$0.00 Claw, Nos. 1 2 3. \$\forall doz 80.00 \$50 Id.0 Lathing, Nos. I 2 3. \$\forall doz 80.00 \$50 Id.0 \$0.00 \$50 Id.0 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.0	Each. \$5,000 75,000 80,000 225,000 400,00—dla 20 5 American. dla 25 8 No. 1 2 3 4 B Each. \$5,000 75,000 10,000 25,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,0000	Perry
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MW	Wrought Strap and T, list Dec. 20, '77dis 60&r. Plate Hinges 58, 10 & 12 in. 5%C # B ( dis.	2 %
4 4 %	Wrought Strap and T, list Dec. 20, '77dis 6o&r. Plate Hinges   8, to & 12 ln. 45c \$\frac{1}{2}\$ \$\frac{1}{2	0 %
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元五元	Screw Hook and Eye	5 %
* * *	Riveted Shank	38
et %	Grub dis 3	2%
d) et	Scovill Pattern, Handled	2 %
d) et	" Scovill Patterndis 20@24	5 %
Se l	Hoks.  Bird Cage, Sargent's listdis 70&10@70&10&10 Cottondis 50&10@70&10&10	18
e de	Cotton, Patented (N. Y. Maliet & Handle Wks), dis 30 Cotton (Humason & Beckley Mfg. Co.)	MMM
et et	Bench—Hotchkias", \$5,00 ₹ doz	MMM
st st	" Skinner's. \$6.2s per doz	1 1
N N	Ceiling   Sargent's list	AMA
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XXX	Horse Hay Forks. Am. Double Acting, \$7 each	1/2
2	Horse Nails	%
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B	Medium and Heavy	1
	Perkins' Snow. \$\ \pi \ \text{ker} \ \ \text{lises} \ \ \text{ker} \ \ \ \text{lises} \ \ \text{ker} \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	1 1
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Į,	Vood Head Picks, Sargent's 7 doz \$1.8; discoctocto?	J
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100/80101510 101/80 1015-700/8010900 100/100/90190150 100/100 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/90190150 100/9019010000000000000000000000000000	GB B B B B B B B B B B B B B B B B B B	alleable.  100 Razor Senulue El adrers E enulue El adrers El adr	inned.  inned.  innerson	d Tolle old Handa Sada Finat and Sam.  Flax. Cetton w Springing Star. Side Sant Sant Sant Sant Sant Sant Sant Sant	2 50 7 12 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	dos \$2.  dos	16 Leed 16 16 Leed 16	Line in the control of the control
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1000.501.01.01.01.01.01.01.01.01.01.01.01.01.0	GREATHER CO. T. L.	alleable.  100 Razor Senulus El adrers E enulus El adrers El adrers E enulus El adrers El ad	inned.  inned.  inned.  innerson  inned.  innerson  inne	d Tolle old Hand Sad d Hand Sad sal lens, so in Mrg. C. Cross Smith Port Niel Solid Mrg. C. Cross Smith Port Ni	2 50 7 12 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	don \$2.  don	16 Leed 16 16 Leed 16	Line in the control of the control
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September 4, 1879.		THE IRON .
Hammer, Hotchkiss	Well Wheels,—Revised listdis 60&10	8 BRASS AND COPPER WIRE. High Brass. Low Bra
Hammer, Hotehkiss	Brass and Copper List of July 1, 1876 dls 240032   Bright and Annealed Nos. o @ 18, dis 57 1/6 to 5	1 No.o to 20
Hart's Patent Lever	Nos. 27 (@ 30.018 05 (@ 07%) Coppered	8 No.23
Beales. Hatch, Counter, No. 171	7 Tinned, Nos. o to 18	NO.26
Turnbull's Market dis 20 Fairbanks' dis 20 Howe's dis 20%;	Annealed Fence, Nos. 18 to 14. dis 60 @ 62% Grape, Nos. 18 to 14. dis 60 @ 62% Galvanized Talescenth, Nos. 20 to 2	\$ No.27 43 447 55 1
Chatillon's Grocers'         dis 40           Eureka         dis 20           Family Universal         dis 45	Nos. 10 and 11	60 No.33
Scales   Scales   Hatch Counter, No. 171.   P dos \$36. dis 45-20	Wile Wheels,—Revised list	No 33
"Sargent's list	Steel Music Wire, Nos. 12 to 27. B B St. co. n. Judd's Picture Wire. dis 80-820-81.0	Wire, Brass Rods, No. 8 and larger not less lengths, 33C.
Box, i Handle. # doz \$.co. dis 10  " # doz 6.co dis 10  Defiance Box and Ship # doz 6.co dis 20	Green Wire Cloth, per sq. foot, 3c @ 3½c	mrass Rous, No. e and larger not less lengths, 3c. Wire straightened and cut, smaller that not less than 2 feet lengths, 3c. Wire and Rods less than 2 feet lengths, 8 Twelve cents per Bextra for spooling o
Ship (common) per dos \$1.00 ne (Providence Tool Co. dis 10:	t Baxter's Adjustable "S," dis 20 Baxter's Adjustable "S," dis 20  " Diagonal. dis 20  Colling & Co. dis 40	MISCELLANEOUS, Common Plain Brass Pail Ears.
Douglass Mfg. Co. dis 35&10 Disston's dia 62% Disston's Patent Excelsior dis 52%	g Coes' Genuine	Brass Door Rail
Sargent's list. dis fockro  **Mernapers**  Adjustable Box Scraper (S. R. & L. Co.), \$6.50 dis zekro  Box, i Handie. \$6.00 dis zekro  dis zekro  Bip (common). \$6.00 dis zekro  Bip (common). \$6.00 dis zekro  Brew Privers. \$6.00 dis zekro  Borew Privers.  Douglass Mrg. Co. dis zekro  Disaton's Patent Excelsior dis zekro  Black Hoss  Buck Bros  Black Handies. dis zekro  Bargent's list. \$6.00 dis zekro  Black Handies. dis zekro  Bargent's list. \$6.00 dis zekro  Black Handies. dis zekro  Bargent's list. \$6.00 dis zekro  Black Handies. dis zekro  Bargent's list. \$6.00 dis zekro  Black Handies. dis zekro  Bargent's list. \$6.00 dis zekro  Black Handies. dis zekro  Berews.	g Girard Standard	Common Plain Brass Pail Ears.  Brass Door Rail.  High Brass Scrap. Low Gilding. Turnings, Filings and Chips half the price days.
Sergent & Co. 9	Cintes Line Wire, Galvanized.   Coli 90 s 3cc in	days.  Plain to No. 20 inclusive ,above ½ in, to 3 i
Fiat Head Brass. dis 45 Round Head Brass. dis 36 Round Head Brass. dis 30 brass and Silver Capped dis 40	Van Wagoner & Williams' Basin	Nos. 21, 22, 23, two cents advance on List Number.
Japanned, list of Plain Screws	Wringers Per Combination dis 35 Wringers Per Combination 5.5.5	a Frian to No. 20 inclusive, above §4 in. to 31 in Nos. 21, 22, 25, two cents advance on List Number 1, 25, 26, four cents advance on List Above No. 26, special rates.
Bed dis 10@10 Machine, Flat Head, Iron, Am. Screw Co. dis 25 Round Head, Iron, dis 25 Round Head, dis	No. 1, 54. No. 2)4, with Cogs. 63.	All Mandrel Drawn Tubes, 5 cents advance
Bench, Iron. dia 55210 "Wood, Beech #dox 85.00, dia 15 "Hickory dia 20210	No. 3, 71. 8 10. 10. 10. 10. 10. 10. 10. 10. 10. 10.	Prices. Fancy Tubing to No. 20. English, Scotch and Extra Patterns Fancy
Hand Rall, Sargent's dis 70% ic.  Humason, Beckley & Cos (low list) dis 20% ic.	Universal, XX No. 256 0000 " No. 2 020 " No. 156 731.	a Rightsh, Scotch and Extra Patterns Fanc, to No. 20
Jack (Wilson's). dis 35 5 Sash (T. & S. Mfg. Co.). dis 25 5 Screw Window Balances.	NO. 1 93-0 NO. 8 93-0 NO. 12 20-0	Add to 2 cents % cent for each additional under 2 feet. All Mandrel Drawn Tubes under % in., 25 c
R. B. Hugunin's, Single gro., \$23.94; 5 gro., \$22.56, diss 5 Chears and Scissors.  Chat Steel	No. 18. " 25.0 No. 22. " 33.0 Crown No. 2. " 54.0	pound advance, zinc Tubing.—net.
Sargent & Co.'s, dis obtoo  Screws. Islack Handles, dis obtoo  Screws. Islack Handles, dis obtoo  Round Head Iron. dis 60  Round Head Iron. dis 45  Round Head Iron. dis 45  Round Head Brass. dis 30  Japanned. Isl to f Plain Screws. dis 40  Japanned. Isl to f Plain Screws. dis 50  Japanned. Isl to f Plain Screws. dis 50  Japanned. Isl to f Plain Screws. dis 50  Bed Machine, Flat Head, Iron, Am. Screw Co. dis 60  Bed Machine, Flat Head, Iron, Am. Screw Co. dis 50  Bed Machine, Flat Head, Iron, Am. Screw Co. dis 50  Bed Machine, Flat Head, Iron, Am. Screw Co. dis 50  Bed Machine, Flat Head, Iron, Am. Screw Co. dis 50  Bed Machine, Flat Head, Iron, Am. Screw Co. dis 50  Bed Machine, Flat Head, Iron, Am. Screw Co. dis 50  Bed Machine, Flat Head, Iron, Am. Screw Co. dis 50  Bed Machine, Flat Head, Iron, Am. Screw Co. dis 50  Bed Machine, Flat Head, Iron, Am. Screw Co. dis 50  Bed Machine, Flat Head, Iron, Am. Screw Co. dis 50  Bed Machine, Flat Head, Iron, Am. Screw Co. dis 50  Bed Machine, Flat Head, Iron, Am. Screw Co. dis 50  Bed Machine, Flat Head, Iron, Am. Screw Co. dis 50  Sash(T. & S. Mfg. Co. dis 50  Screw Window Halances. dis 80  Screw Window Halances. dis 80  Bed Machine, Flat Head, Iron, Am. Screw Co. dis 50  Screw Window Halances. dis 80  Screw	Webster's Pat. Combination   dis 3t	Scotch and Extra Patterns Scotch and Extra Patterns GERMAN SILVER TURING.—di
Barnard's Lamp Trimmers	Excelsior, No. A, with Folding Bench. 78.0	4 Per cent
Sheaves. dis tokto %	No. 3   00.0	0 12 " 0 15 " 0 16 " 0 18 "
Patent Roller	Stamped Tinware.—New List Dec. 1, 1878. Common Stamped Ware	STEEL.—DUTY: Bars, Ingots, Sheets valued at 7 cents \$\vec{10}\$ D., or under, 244 cer
Heinisch Trimmers and Scissors dis 50&10 \$  Sheaves.  Sheaves.  R. & E. list	Stamped Deep and Retinned Waredis 25	eents, and not above 11, 3 cents & b; over b, and 10 % ad val. Railway Bars, 12, Railway Bars, in part Steel, 1 cent & b.
Moore's Anti-Friction (Hanging)	METALS.	Heasemer or pneumatic process, of whate description, shall be classed as
Philadelphia Hangina	IRONDury: Bars, 1 to 156c. # 5; Sheet, Band	STEEL.—DUTY: Bars, Ingots, Sheets valued at young who, or under, 24% cet eents, and not above it, goents who, over the cents, and it of ad val. Railway Bars, it has made from the cents of
Remington's (Lowman's Patent)	IHON.—DUTY: Bars, 1 to 154c. \$\Pi\$ : Sheet, Banc Hoop and Scroll, 154 to 154c. \$\Pi\$ in provided, that nom of the above Iron shall pay a less rate of duty than a per cent. Fig. \$\Pi\$ to no: Polished Sheet, so. \$\Pi\$ Wrought Scrap, \$\Pi\$ on ton: Polished Sheet, so, \$\Pi\$ be Wrought Scrap, \$\Pi\$ on Baliroad 70c. \$\Pi\$ 100 Bs. Bolier and Plate, 154c. \$\Pi\$ s. Ply 17en—America's Nomibal.  Ston \$\Pi\$ 1.00 Bs. \$\P	Boiler Plate
" Patent	Raiiroad 70c. # 100 hs. Boiler and Plate, 1940. # h. Pig iron—American Nominal Foundry No # ton \$22.00 @ 23.00	File
ron and Brass Head, R. & E. list	0ray Forge ton 21.00 @ 22.00 ₩ ton 21.00 @ 22.00 ₩ ton 21.00 @ 22.00	Saw Plate, mill and mulay.  gang and X cut.  circular as to size.  Kngtish Steet,—
quare Frames, Round Cornered, by casedis 70 % Less than a case	Eglinton	Best Cast. Extra Cast. Round Machinery, Cast
Less than a case	Giesgarnock	Circular as to size.  Knglish Steel.—  Best Cast.  Round Machinery, Cast.  Round Machinery, Cast.  Best Double Shear.  Elister, ist quality.  Sheet Cast Steel, ist quality.  ANTIMONY
Spoke Trimmers.  Onney's # doz \$10.00, dis 40&10 \$ tearn's # doz \$10.00, dis 40&10 \$ tearn's # doz \$10.00, dis 40.80	Scrap. Wrought Scrap, from vard. # ton. nom. 25.50 @ 27.00  Mary Iron, Trong More.	ad quality
ves'No. 1, \$15.00; No. 2, \$12.00 \( \psi \) dos, dis 50\$10 \( \psi \) ouglass'\( \psi \) dos \$9.00, dis 20\$10 \( \psi \) Spectus.	Common Iron:	ANTIMONY adquality
Timed from   dis 40% 5   asting   dis 40% 5   asting   dis 40% 6   ritannia   dis 40% 6	\$\fost \text{2 in. round and square}\} \psi \text{b 2.30}\ \text{1 to 6 in.x\frac{1}{2} to 1 in}\} \psi \text{b 2.30}\ \text{Refined iron:}	LEAD,-DUTY Pig \$2 \$7 100 Ds ; old Lead
Boardman's Sons, A1	1 to 6 in. x34 to 1 in	Pipe. Tin Lined Pipe.
eed & Barton dis 40% 5 % all & Elton dis 40% 5 % olmes, Booth & Haydens dis 40% 6 %	Refined Iron:	Shot. Drop 6Mc, Buck, 7
Ougrass	Common   R. G.   American   R. G.   American   R. G.   American   R. G.   American   R. G.   R. G.   American   R. G.   Ameri	N. P. U. A. 200; B. 46c; C. 200 TIN.—DUTY Plutes, Sheets, Tagger and T. B.; Elecro-galvanized Plates, 20; F. S. M. of, not enumerated, 25 per cent, ad. val. I and Pigs free. Banca, subject to duty of Banca.
Tables \$2.00 \$ gross, not in Cowles Hdw. Co.). dis 10 \$ case lots. dis 20 \$	35 to 26	b; Elecro-galvanized Plates, 2c & b; Major, not enumerated, 35 per cent. ad. val. I and Pigs free. Banca subject to divised
Stocke and Dies	77.	Banca Straits. English
Stone		I C 10X14 } Prime Charcoal
Ashita Stone	Patent Planished	C 12X12 X 10X14 2 14X20 Charceal
7ashita Stone (Boyd & Chase)No. 1 ₩ B 15c net urkey Oil Stone (Boyd & Chase)4 to Sin, \$1.00 ₩ B. dia 10 %	which Copper is a component of chiefvatue), 45 % ad valorem. American Ingot	I X 12X13 D C 12½X17 D X 12½X17 D X 12½X17
** Slipe	Braziers' Copper, ordinary sizes, over 15 z., # 5q. ft # 5ce	DX 1252x17 For each ad din al X add
Stove Polish.  Bernas \$6.00 dis 10 %	over 13 Oh., W sq. ft	I C 10X14 )
old Medai. # gross \$6.00, dis 25 %  Mirror " # gross \$6.00, dis 5 %  Discrete # gross \$6.00, dis 5 %  W gross \$6.75, not	Circles less than 8, in.i. n diameter # 2 280 Uircles 84 in. diameter and over # 22 31 Segment and Pattern Shoots # 270	Prime Char. ad qua. I C 14x2c
sing Sun	Brasiers' Copper, ordinary sizes, over 15 z., \$\psi\$ = 5c. Brasiers' Copper, ordinary sizes, 16 oz. and over 13 oz., \$\psi\$ s.q. ft. \$\psi\$ = 3c0 Brasiers' Copper, ordinary sizes, 16 oz. and over 13 oz., \$\psi\$ s.q. ft. \$\psi\$ = 3c0 Brasiers Copper to oz and 13 oz., \$\psi\$ s.q. ft. \$\psi\$ = 3c0 Circles less than \$\psi\$ is all diameter? \$\psi\$ s.q. ft. \$\psi\$ = 3c0 Circles & ft. \$\psi\$ in diameter? \$\psi\$ s.g. ft. \$\psi\$ = 3c0 Circles & ft. all anterior and over. \$\psi\$ s.g. ft. \$\psi\$ = 3c0 Circles & ft. all anterior and over. \$\psi\$ s.g. ft. \$\psi\$ s.	C 20X28 12.00 @ 12.25   11.50 @ 11.75   11   X 20X28
xon's Plumbago. \$\psi\$ &c. net \$\squares\$ ecl dis \$\squares\$ csl \$\psi\$ &c. net \$\squares\$ col	No Copper is Sheathing except 14x48 inches and not to exceed 34 oz. to the sq. ft.	SOLDER. SOLI 100 @ 110; SPELTEN-DUTY: In Pigs, Pars and Pigo ba.
ar Try Squares and Bevels	For tinning both sides, double the above amount	American cash Beyen Port from Lehigh Ore. Lehigh, on spot. ZINCDUTY: Pig or Block, 1.0 \$\psi\$ 100 \$\mathbb{n}\$
\aciss, tirads, &c. List of May, 1878		BReet, Cask
ouble-Pointed Tacksdis 10 %	14 and 16 oz. and heavier. 7 h 31c By the case. 9 h 30c 12 oz. and lighter	Paper Stock, Old Meta
Tap Bores   dis 26x 5	(And all sizes not over 20 in. wide.)  3300.  14 and 16 oz. and heavier	(Dealer's Selling Price.)
mericandis 25 % ring Tapesdis 25 % Thermometers.	Brass.  Brass.  Brass.  Brown & Sharp's Gauge the Standard for Wire.  English Gauge the Standard for Wire.  FRASS MANUFACTURESS' PRICE LIST.—dis nominal.	
Tebacce Eutters, dis 70 % Tebacce Eutters, terprise Mfg. Co. (Champion)	Cash prices for Roll and Sheet Brass. For less quan	Canvas met. White outton, new. " No. 2. White linen rags, No. 1. " No. 2.  Seconds. Mixed woolens.
1   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100	tity than 100 Ds. add 30 F B.	Soft woolens
	All Nos. not thinner than to No. 28, wider than 2 in., not wider than is in All Nos. to No. 28, inclusive, and widths over 14 to 20 in., inclusive. All Nos. to No. 28, inclusive, and widths over 20 to	Mixed woolens Soft woolens Gunny bagging Jute Butts Kentucky bagging Waste paper and scraps Rope cuttings Kentucky bale rope Grass Fope Tarred shaking: Hard White Shavings, No. No. I. White Shavings, No. 2.
me, Newhouse	4c. % hadvance on each No. above Nos. 26 to 36, in- clusive.	Grass rope
ouse, Wood, Choker	All Droom thinner than Wo of to Distant Trees at	Hard White Shavings, No. 1.  8oft "No. 1.  White Shavings, No. 2
Catch-em-alive	Sheets 2425, and all sheets cut to particular sizes and lengths under 50 in, in width wider than 2 in, 320 Printer's Rules	White Shavings, No. 2, Mixed Shavings, part white. Imperfections, No. 2, best folded sheets. No. 1, Heavy Stock Book Stock.
throps Brick and Plasteringdis 25 5 ed's Brick and Plasteringdis 15 5 seton's Brick and Plasteringdis 20 6	Sheets wider than 30 in. and under 40 in.   42c	" " Light
ace's Plasteringdis 30 %	LOW BRANC	Pure Manillas and Hardwares
ades' Brickdis 20 %	qc \(\varphi\) B more than High Brass, Gilding Metal, sc \(\varphi\) B more than High Brass. (In Bars	Commons. Binders' Board Cuttings. Straw Board Cuttings. Wooden Tailor Clips.
tter and Cheese	(Planed or Polished490 FOR SLITTING, Metal in width 2 in. to 1/4 in. to No. 28, inclusive, IC. P	SECTION
- No Monte de la Companya del Companya de la Companya de la Companya del Companya de la Companya	b advance.  Metal, in width 2 in to 1 in., thinner than No. 28, 20, \$\pi\$ b advance.  Metal, inwidth 1 in. to 1/4 thinner than No. 28, 30 \$\pi\$ b	Copper, heavy. Copper Bottoms. Yellow Metal. Bras, light. Bras, heavy.
Howard'sdis 25&10 \$	advance  fetal, in width 1/2 in. to 3/3 inclusive, not thinner than  No. 26, 2c. # B advance.	Yellow Metal.   1  Brass. light.   1  Heavy Composition.   1  Old Lead, solid.   1  Tea Lead   2  Zinc.   1  No. 2   Der Marcellor   1  Wrought fron.   Der ton \$i_1\$, 1  Stove Plato.   Der to \$i_2\$.   1  Stove Plato.   Der to \$i_3\$.   1  Stove Plato.   Der to \$i_4\$.   1  Stove
	No. 28, 2c. \( \mathbb{P} \) advance. fetal, in width \( \frac{1}{2} \) in. to \( \frac{1}{2} \) thinner than No. 28, 3c. \( \text{g} \) B advance. fetal, \( \frac{1}{2} \) in. in width and less, 1cc. \( \mathbb{P} \) B advance, int of the above widths cut to particular lengths, add	Zinc Pewter No I
ti Simpson's Adiustable disastro di	any of the above widths cut to particular lengths, add 70. W B. GERMAN SILVER MARKET METAL AND WIRE, Market Metal. Wire.	Wrought Ironper to \$13. Light Ironper to \$13.
well Hand Visesdis 20 %	4 per cent., 12 inch, to No. 26	Grate Barsper t
hardson's Vise and Anvildis 25 %	German Silver Sheets over vain, wide and welching	Paints, Oils, &c.
Tashor Cutters.	Advance of for each additional inch in width above	Paints. Black Lamp, Coach Painters
ny's	All German Silver thinner than No. 36 is Platers, at & B additional.  German Silver Scrap one-half less than net price of	Black Lamp, Coach Painters.  Ordinary  Forp, fair.  Forp fair.  Black Paint, in oil.  Regs, so asst dilige, Prussian, fair to best  medi.
Veather Strips. stective Ventilator Co. sdis as & &	in Market Metal. German Silver Turnings, Filings and Chips, half the price of Scrap.	iline, Prussian, fair to best in oil

9	BRASS AND COPPER WIRE. Gild'g an	ad
09	No.e to 20	er.
5 9	No.22	47
5 7	No.24	43
0 %	NO.26	48
0 7	1 NO.28	£3 48
6 9	NO.30	57
160	NO.32	73
301	No 34	88. 89.
60	Flat, Square and Half Round Wire & F B advance	ce
30		ıd
101		et
et	Wire straightened and cut, smaller than No. 8, an	d
5 %	Wire and Rods less than 2 feet lengths, special rate Twelve cents per B extra for spooling on 1 B spool	9.
3 %	MIRCELLANEOUS	
1 %	Common Plain Brass Pail Ears	36 38
3 %	Low "	IC
18.8	Gilding.  Turnings, Filings and Chips half the price of Scrap.  Terms—Net cash. Interest to be added after third	50
8		
18	Plain to No. 20 inclusive above 1/4 in, to 3 in	B 38
50	Nos. 21, 22, 23, two cents advance on List for each Number.	18
10.00	Nos. 24, 25, 26, four cents advance on List for each	
00	Number, Nos. 24, 25, 26, four cents advance on List for each Number, Above No. 26, special rates, Plain, 34 inch	
00	Plain, ¼ inch	55
00	All Mandrel Drawn Tubes, 5 cents advance on List Prices.	55
00		şe
00	to No. 20	50
00	Add to a conta le nont for each additional autition	
00	under 2 feet. All Mandrei Drawn Tubes under % in., 25 cents per	
00	ZINC TUBING.—net.	
00	Fancy	
00	GERMAN SILVER TUBING,—dis to %	
00	4 Per cent.	
00	12 14 1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.	25
00	16 4 18 15 16 16 16 16 16 16 16 16 16 16 16 16 16	5
	STEEL DUTY: Bars, Ingots, Sheets and Coils	5
*	valued at 7 cents & b., or under, 244 cents; over, cents, and not above 11, 3 cents & b; over 11, 34 cent	4
	₩ B, and 10 % ad val. Railway Bars, 14 cents ₩ B Railway Bars, in part Steel, 1 cent ₩ B. Provided	
	**STEEL.**—DUTY: Bars, Ingots, Sheets and Colivalued at 7 cents & B., or under, 24% cents; over, cents, and not above 11, quents & B., over 11, 3% cent & B., and 10 % ad val. Railway Bars, 14 cents & B. and 10 % ad val. Railway Bars, 14 cents & B. Provided that Metal cemented, cast or made from Iron by the Beasemer or pneumatic process, of whatever form of description, shall be classed as	8
	Week Steels	
d	Spring	e l
15		
	Machinery (round and square)90	0
10		
0	Saw Plate, mill and mulay	3
0		
	Round Machinery, Cast. W 10560	1
0	## Best Cast ## 1556 ## Extra Cast ## 1556 ## Extra Cast ## 1566 ## Round Machinery Cast ## 1566 ## Bwagd, Cast ## 1566 ## Best Double Shear ## 1566 ## Blister, 1st quality ## 1566 German Steel, Best ## 1516	1
0	German Steel, Best % B 130	1
0	Sheet Cast Steel, 1st quality	
1	German Steel, Best 9 130 130 130 130 130 130 130 130 130 130	1
0	ANTIMONY LEAD.—DUTY Pig \$2 \$\psi\$ too \$\mathbb{B}\$; old Lead, tyle \$\mathbb{B}\$ \$\psi\$ b \$\psi\$.  American.	1
.	American	1
0	Bar. 4395 3 4395 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
20 00	Sheet	1
	Sheet.	1
1	N. P. U BABBITT METAL. # \$ 6 @ 70	1
1	N. P. U	1
J	of, not enumerated, 35 per cent. ad. val. Bars, Block and Pigs free. Banca, subject to duty of 10 per cent Banca.	1
	Banca	1
	THE OF A PERSON	1
	1 C 10X14 Prime Charcoal	1
	Y lox14 Charges   Bar G	l
1	I X 12X12	1
1		1
ı	COKE TIN PLATE.  Best. ad quality. Ordinary.	ı
1	I C 10X14 } 85.75 5.60 5.00 € 5.25 I C 14X20 } 6.00 5.25 5.50	1
1	I C 12x12 6.00 4.75 5-25 @ 5-50  TERNE PLATE.  Coke.	1
	I C 14x20 6 0.00 5.50 6 5.63 6 5.00 6 5.25	ı
1	C 13X14   \$c.75	1
1	I C 20x200 @ 18.74 I C 14x20 M. F. Brand	1
1	IC 14 720 M. F. Brand	1
1	100 bs. American, cash Bergen Port from Lehigh Ore	1
ı	Bergen Port from Lenigh Ore	l
1	BROCK, USBK	1
1	" Open	1
ı	Paper Stock, Old Metals, &c	
ľ		
1	Canvas linen	
١,	Canvas linen. 4	
l,	** No. 2	1
l	Mixed woolens	1
1	Gunny bagging	
1	Soft woolens         10         6           Gunny bagging         37%         6           Jute Butts         3         48         3           Kentucky bagging         4%         6         18           Waste paper and scraps         6         18         18         6         18           Kenpe cuttings         1%         6         18         4         44         19         19         6         18         18         6         18         18         6         18         18         6         18         18         19         6         18         18         18         18         18         19         6         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18	
1	Rope cuttings	-
1	Farred shaking	
8 7	oft "No. 1	100
1	fixed Shavings, part white	1
1	Book Stock	
1.	a a Light 1/4 &	
1000	No. 1, Heavy Stock   356 66	
P. Bellin	logus Manilas and Hardwares	
SPECT.	inders' Board Cuttings	
N	voolen Tailor Clips	
C	opper, heavy	7
CWE	eliow Metal	
El HI	" heavy	I
T	en Lead, sotiu	
P	ewter No 1	-
VI	Frought fron	
L	Opper beavy	
G	rate Bars Der ton 5.00	

1	Plus Chinese day
	Blue Chinese dry
R	Brown, Spanish
3	Carmine, 40 combination price
3	Green, Chrome
8	Parisgood, 250; best, 300
0	Iron Paint, Bright Red
8	Red Purels Parels
7	Purple P D 3c
3	Ground in Oil, Bright Red # 15 5%C
3	Brown
ŝ	Brown
9	Orange Mineral
ı	Red Lead, American   6c   6c   6c   6c   6c   6c   6c   6
	" venetian (N. C.) dry
	"Indian dry 9@ 120
١	Sienna, American, Raw40
٠	Burnt
1	" Raw " II @ 15 @ 25C
;	Rose Plink   90   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120   120
Ч	" Raw
	Vermillion, Chinese
	"Trieste
	White Lead American, Dura dry 6 to 20
ı	" in oil
	Vermillon, Chinese.         90c           "English         56 % 75%           "Trieste.         1.10c           American, Common.         1.40c           White Lead, American, pure dry         0.10 %           White, Paris, English, prime.         10 bits. 36 % 24%           Yellow Ochre, French.         11.01.           1 noti.         1.81.75           1 noti.         1.00.88 15%           Yellow Chrone.         1.10.088 15%           Yellow Chrone.         1.10.088 15%
I	" in oilasst'd cans, ne; kegs, 8e
1	Yellow Chrome
ı	Zinc White, American No. i, dry
1	No. I, in oil90
1	Yellow Chrome
۱	OII-
ı	Linseed, Raw, in casks and bbls.    Bolled.    Bolled.
1	Bleached Whale
ı	11 Sperm # gat. 930
1	Signal
ı	Prime Lard473
ı	West Virginia
١	Empire Cylinder
ĺ	Miners' Oil
I	Neatsfoot
ı	Machinery
١	Engine
1	
1	G B WAI
1	O
J	No. 103 Chambers
1	1
1	
1	1
1	1
-	
ſ.	

	les.			O.
Asph atum Benzine			9 0	mal. 16
Dryer, Patent, Am'n	*******		******	
Frostings.	aus t	cans,	10%C;	Keg,ç
44 Sheet				90
" Sheet			** * *	8
Gum, Copal				36
ii Shallac English				29
" dark				27
Gum, Copal			***** *	C # 10
Mineral Wool			1 134	@ Ibi
Pumic Stone, selected Lump	16			4 @ 6
Posts in bladders	******	******		2%
Putty, in bladders		*******	*****	574
in bulk		*******	******	** **?
Spirits Turpentine				- 26
Whiting Spanish				
Glas				
FRENCH WIND				
Prices current pe	r box q	\$ 50 866	4.	
Single ThickD	lscoun	608:20	«	
SIZES,	rst.	ad.	ad.	4th
	-		-	
0 X 8 to 10 X 15	\$ 8.00	\$ 6.75	\$ 6.25	# 5-7
18 X 22 to 20 X 30	8.75	8.00	7.50	8.7
15 X 36 to 24 X 30	13.75	11.50	9.75	0.7
20 X 28 to 24 X 36	12,50	12.25	11.25	
26 X 36 to 26 X 44	14-75	13-75	11.75	
26 x 46 to 30 x 50	10.25	15,00	13.00	
30 X 52 to 30 X 54	17.29	10,00	13,50	
30 x 56 to 34 x 56,	18.74	16.79	15.00	
36 X 60 to 40 X 60	19.40	18,00	18.00	
			-	
Double Thick.—D		,		, 1 b.
Double Thick.—D	166.	ort i	0.078	F 6 14.
SIZES.	1st.	2d.	gd.	
SIZES.	\$12.00	\$11,00	\$10.00	B 9'2
81ZES.  6 x 8 to 10 x 15	\$12.00 14.75	\$11,00 13.75	\$10.00	
5 X 8 to 10 X 15	\$12.00 14.75 19.00	\$11.00 13.75 17.75	\$10.00 13.75 16.00	
5 X 8 to 10 X 15	\$12.00 14.75 19.00 21.50	\$11.00 13.75 17.75 19.25	\$10.00 12.75 15.00 16.50	
81225. 6 x 8 to 10 x 15. 11 x 14 to 16 x 22. 18 x 22 to 20 x 30. 15 x 36 to 24 x 30. 20 x 28 to 24 x 30.	\$12.00 14.75 19.00 21.50 23.00 25.00	\$11,00 13,75 17,75 19,25 20,75	\$10.00 13.75 16.00	
817.8.8.6 6 X 8 10 10 X 15 11 X 14 10 16 X 24. 13 X 24 10 0 X 20. 15 X 26 10 20 X 20. 15 X 26 10 24 X 30. 26 X 26 10 20 X 44. 26 X 26 10 20 X 44.	\$12.00 14.75 19.00 21.50 23.00 25.00	\$11,00 13,75 17.75 19.25 20.75 23,00 25,00	\$10,00 13.75 15.00 16.50 18.24 19.25 31.25	₽ 9°2 18.7
81XES.  6 X 8 to 10 X 15.  11 X 14 to 16 X 2.  18 X 22 to 20 X 30.  15 X 36 to 24 X 30.  20 X 36 to 34 X 30.  30 X 36 to 30 X 44.  30 X 36 to 30 X 54.	\$12.00 14.75 19.00 21.50 23.00 25.00 27.00 28.50	\$11,00 13.75 17.75 19.25 20.75 23.00 25.00 26,00	\$10.00 13.75 15.00 16.50 18.24 19.25 31.24 22.25	
81228.  6 x 8 to 10 x 15.  11 x 14 to 16 x 2;  13 x 14 to 16 x 2;  15 x 26 to 26 x 30.  15 x 26 to 26 x 30.  15 x 26 to 26 x 30.  16 x 26 to 20 x 44.  16 x 46 to 30 x 40.  10 x 40 to 30 x 40.  10 x 40 to 30 x 40.	\$12.00 14.75 19.00 21.50 23.00 25.00 27.00 28.50 30.00	\$11.00 13.75 17.75 19.25 20.75 23.00 25.00 26.00 27.75	\$10.00 12.75 16.00 16.50 18.25 19.25 21.25 22.25 24.75	
81KEB.  6 X 8 to 10 X 15. 11 X 14 to 16 X 25. 13 X 14 to 16 X 25. 15 X 36 to 24 X 30. 15 X 36 to 24 X 36. 36 X 39 to 24 X 36. 36 X 39 to 36 X 44. 36 X 36 to 36 X 44. 36 X 36 to 46 X 44. 37 to 46 X 44. 38 to 47 X 48. 38 to 48 X 48 X 48. 38 to 48 X 48 X 48. 38 to 48 X 48 X 48. 38 to 58 X 48 X 48. 38 to 58 X 48 X 48.	\$12.00 14.75 19.00 21.50 23.00 25.00 27.00 28.50 30.00 31.75	\$11.00 13.75 17.75 19.25 20.75 23.00 25.00 26.00 27.75 30.00	\$10.00 12.75 16.00 16.50 18.25 19.25 21.25 22.25 24.75 27.00	
812EB.  6 X 8 to 10 X 15.  11 X 14 to 16 X 24.  13 X 24 to 20 X 20.  15 X 26 to 24 X 30.  26 X 28 to 24 X 36.  26 X 26 to 26 X 44.  26 X 46 to 20 X 44.  26 X 46 to 20 X 49.  26 X 26 to 20 X 49.  27 X 26 X 26 X 26.	\$12.00 14.75 19.00 21.50 23.00 25.00 27.00 28.50 30.00	\$11.00 13.75 17.75 19.25 20.75 23.00 25.00 26.00 27.75	\$10.00 12.75 16.00 16.50 18.25 19.25 21.25 22.25 24.75	
81XXB.  6 X 8 to 10 X 15. 11 X 14 to 16 X 25. 13 X 14 to 16 X 25. 15 X 26 to 24 X 30. 15 X 26 to 24 X 30. 15 X 26 to 24 X 36. 16 X 26 to 24 X 36. 16 X 26 to 34 X 36. 16 X 26 to 30 X 24. 16 X 26 to 30 X 54. 10 X 36 to 30 X 54. 10 X 56 to 40 X 56. 10 X 60 to 40 X 60.	\$12.00 14.75 19.00 21.50 23.00 25.00 27.00 28.60 30.00 31.75 35.50	\$11.00 13.75 17.75 19.25 20.75 23.00 25.00 25.00 27.75 30.00 32.50	\$10.00 12.75 15.00 16.50 18.24 19.25 21.24 22.25 24.75 27.00 30.24	28.7
81KEB.  6 X 8 to 10 X 15. 11 X 14 to 16 X 25. 13 X 14 to 16 X 25. 15 X 36 to 24 X 30. 15 X 36 to 24 X 36. 36 X 39 to 24 X 36. 36 X 39 to 36 X 44. 36 X 36 to 36 X 44. 36 X 36 to 46 X 44. 37 to 46 X 44. 38 to 47 X 48. 38 to 48 X 48 X 48. 38 to 48 X 48 X 48. 38 to 48 X 48 X 48. 38 to 58 X 48 X 48. 38 to 58 X 48 X 48.	\$12.00 14.75 19.00 21.50 23.00 25.00 27.00 28.60 30.00 31.75 35.50	\$11.00 13.75 17.75 19.25 20.75 23.00 25.00 25.00 27.75 30.00 32.50	\$10.00 12.75 15.00 16.50 18.24 19.25 21.24 22.25 24.75 27.00 30.24	18.7
812EB.  6 x 8 to 10 x 15.  11 x 14 to 16 x 24.  13 x 24 to 20 x 30.  15 x 36 to 20 x 30.  15 x 36 to 24 x 30.  16 x 36 to 20 x 44.  16 x 46 to 30 x 40.  10 x 5 to 30 x 50.  10 x 5 to 30 x 50.  10 x 5 to 30 x 50.  10 x 6 to 40 x 60.  10 x 6 to 40 x 60.	\$12.00 14.75 19.00 21.50 23.00 25.00 27.00 28.50 30.00 31.75 35.50	\$11,00 13,75, 17,75, 19,25, 20,75, 23,00 25,00 25,00 27,75 30,00 32,50	\$10.00 12.75 15.00 18.25 19.25 21.25 22.25 24.75 27.00 30.24	ever
81XEB.  6 x 8 to 10 x 15.  11 x 14 to 16 x 25.  13 x 14 to 16 x 25.  15 x 36 to 26 x 30.  15 x 36 to 24 x 30.  16 x 36 to 25 x 44.  16 x 46 to 30 x 40.  10 x 46 to 30 x 40.  10 x 6 to 24 x 30.  10 x 6 to 25 x 44.  16 x 46 to 30 x 40.  16 x 36 to 30 x 50.  16 x 56 to 30 x 50.  16 x 56 to 30 x 50.  18 x 56 to 34 x 50.	\$12.00 14.75 19.00 21.50 23.00 24.00 27.00 28.50 30.00 31.75 35.50 per bo	\$11.00 13.75 17.75 19.25 19.25 20.75 23.00 25.00 27.75 30.00 32.50 0x ext	\$10.00 12.75 15.00 16.50 18.25 19.25 21.25 22.25 24.75 27.00 30.25	ever

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remains at rest.

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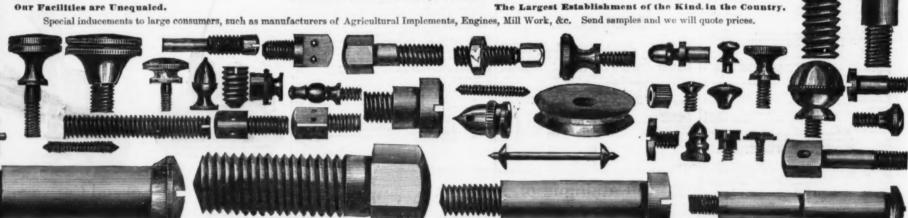
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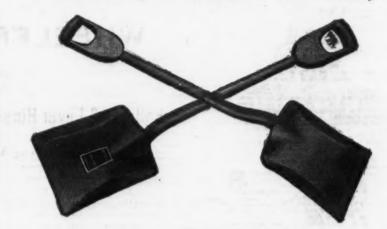
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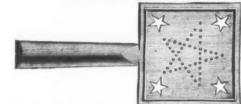


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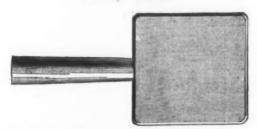


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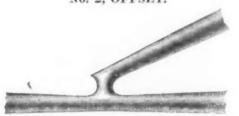


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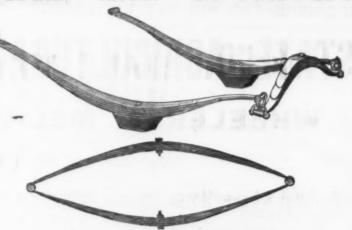
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will be distributed among the Iron, Steel, Hardware and Metal Trades throughout Great Britain, the Continent, India, South America, the West Indies, Australia, New Zealand, the Cape, &c., special attention being paid to the

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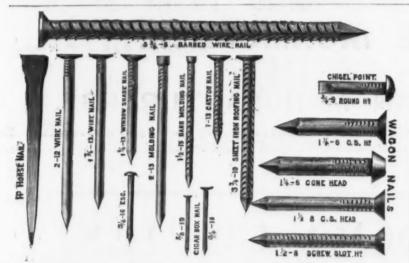
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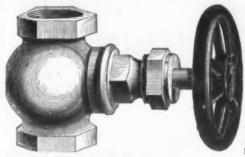
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Our agents, Graham & Haines, 113 Chambers Street, New York, carry a full line of our goods, and will be pleased to serve you at Factory prices,

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For STEAM, WATER and GAS. Iron Pipe and Fittings.

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#### BUERK'S Watchman's Time DETECTOR.

MPORTANT FOR ALL LARGE CORPORATIONS AND MANUFACTURING CONCERNS.

Capable of controlling with the utmost accuracy the motion of a watchman or patrolman as the ne reaches different stations of his beat. The instrument is complete in itself, portable and as reliates the best lever watch. Is requires no fixture or wires communicating from room to room, as is the ewith the ordinary watch clocks. A small, inexpensive stationary key is alone required at each tion. The instrument will, in all cases, be warranted perfect and satisfactory.

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This knife is the best in use for cutting down hav and straw in mow and stack, cutting fine feed from bale, cutting corn stalks for feed, cutting

The blade is best cast steel, spring temper, easily sharpened, and is giving universal satisfaction. A few moments' trial will show its merits, and parties once using it are unwilling to do without it. Its sales are fast increasing for export as well as home trade, and it seems destined to take the place of all other Hay Knives.

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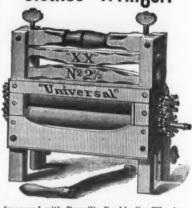
Either old or new Blinds thus fitted can be opened in the usual way or used as an awning at pleasure.

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Cast Iron Pipe FOR WATER AND GAS.

Lamp Posts, Valves, &c., Mathew's Pat. Anti-Freezing Hydrants. 400 CHESTNUT STREET.

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Every machine guaranteed or no sale. Is now improved by lever attachment. Works precisely like bellows lever, or, if preferred, crank can be used. The trade are invited to write for terms, descriptive circulars, &c.

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Flanders' Improved Locomotive Cylinder Boring Machine.

Bar and screw of cast steel, with two extra cutter eads. Manufactured and for sele by the

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PHILADELPHIA.	Speens.— Plated
(Corrected weekly by Lloyd, Supples & Wallon). Terms, 30 days. For 60 or 90 days, interest added at 10	Flated. German Silver. Britannia, Boardmans. "Parkers. T.nned. "by case.
	T.nned  by case  by case  phyladelphia  f.in, 8400; Rin, 8700; Ri
Anvile. Peter Wright's, * b. gold. 10%c over 20 bs. 11c act Wikinson's, * b. gold. 11c net Ragie (American) 0 cents per lb—dis 20% Apple Farera. 0	Gem Coil No. 1, Large Jap'd
Ragie (American) 9 conts per 10—dis 275  Apple Parers. 9pr doz \$ 5 00 net  1 74 6 00 net  1 75 75 75 00 net  Peach Parers. 10 00 net Lit: le Favorite, corer and silcer. 7 50 net Lots of 10 to 25 dozen special price.	Stocks and Dies. Stove Polish.—Gem
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Bates' Nut Augers	Wrenches.— Girard (Coe's Pattern)
Benjamin Pierce Auger Bitta	Agricultural— dos 10 io., \$3 60; 12 in., \$5 40 n Coes' depune.  "Pat. Wrot Bar "Mall" Tat's "Wrot" Phila. Tool Co., Duplex.
Jennings" dis 10&10 %  Bonney's Pat. Hol. Augers, list \$48 % doz dis 25&10 %  Stearns' Pat. Hol. Augers \$48 dis 25&10 \$	Taft's " Wrot " Phila. Tool Co., Duplex
Light and "Common"	Mo. 27 to 36
Ewiss Pattern Hand Belis	Tinned Broom Wire
Light and "Common"   dis 25&10 5	Wire.—  Bright or Ann'd, No. 19 to 36  No. 27 to 36.  Coppered to 18.  Cinned Broom Wire.  Galvanized, No. 7 to 18  Wringers.—Noveity No. 10.  Noveity No. 2  Universal, No. 24.  Peerless, No. 24.  No. 2
Horing Wachines.  Upright, with Augers	No. 2
Angular, with Augers 11 00 dis 40±10 % 70 dis 40±10 % 9011a.—Eastern Carriage Bolts 20 % 40±20 % dis 75±28 % 40±20 % dis 75±28 % 40±20 % dis 75±28 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 40±20 % 4	PITTSBURGE
Paraces	TERMS.—Note or acceptance at 60 days rate of exchange on New York, or a dicent. for cash, if remitted within 10 d
Sponard	cent. for cash, if remitted within 10 d of invoice.  Flat Bar.
Cast Loose Joint, Narrow	134 to 4 by 36 to 1 inch
Acorn   Jap'd   dis 75&10 s   Mayer's Loose Joint   dis 70&10 s   Wrought Loose Fin   dis 50 g	1 and 134 by 34 to 34 "
## Table Hinges and Data Fings dis 50 g ### Loose John dis 50 g	Heavy Bands. 314 to 6 by 14 and 5-16 inch. 314 to 314 by 14 and 5-16 inch. 1 to 114 by 14 and 5-16 ii 1 to 114 by 14 and 5-16 ii 14 to 14 by 14 and 5-16 ii 15 and 14 by 14 and 5-16 ii 15 and 14 by 14 and 1-16 ii
Louis   Garage   Coll     Bind Butts   Garage   Garage     Parker   Gla 758-10     Clark   Gla 758-10     Sheperd   Gla 768-10     Lull & Porter   Gla 65/8-10     Lull & Porter   Gla 63/4-10     Huffer's   Gla 33/4     Sheperd   Gla 33/4     Coll   Gla 758-10	
Luli & Porter	3 to 6 by 16 to 3-16
Galvanized Fump Beat Froof Coli Chain—(English). Beat Froof Coli Chain—(English).	134 to 234 by No. 21 and No. 12
Ohtsels, Bocket Framing	3 to 6 by 16 to 3:16. 3 to 6 by 16 to 3:16. 13 to 6 by No. 11 and No. 12. 13 to 24 by 16 to 3:16. 13 to 25 by No. 11 and No. 12. 1 to 16 by 16 to 3:16. 1 to 3:16 by 16 to
Onatus	Hoop Iron.
Coffee Mills. dis 25 s Enterprise. dis 25 s Outlery. Walden Pocket dis 3545 s cash	## And 9-15, Nos. 13 to 15.  ## And 11-16.
Enterprise  Outlery.—Walden Pocket dis 35 & 5 cash Landery. Frary & Clark, J. Russell & Co., Lamson & Goodnow Mfg. Co. and Meriden Cutlery Co., Manu facturers' prices net	% and 9-16, 17 to 20
Prawing Knives.— Hart Mrg Co.'s	13 to 2 " 16 to 16
Tinned	Rounds and Squares.  1 to 134
Tined. dis 50.810 g 60 s 70 s 700 s	Rounds and Squares.   1 to 116
Nicnoison	% to %
Spencer	Oval Iron. 74 to 2
No   1   3   7   8   7   8   7   8   9   9   9   9   9   9   9   9   9	Half Ocal and Half Roun  to 2 inch 3.20   1/4
Geneva Fluter dis 2) & Favorite com. Fluter & Sad-iron. Fdoz \$20 dis 25&10 s	% to 1% by 5-16 to % inch. Wagon Box Iron. Juniata 3c P B over Americ
	Common. Char. No. 10 to 14
### ### ### ### ### ### ### ### ### ##	Wagon Box Iron   Sheet Iron   Sheet Iron   Char   Char   Char   No. 10 to 14
Ausabit Polished & Pt dand blued and Pointed 31 28 26 25 24 25	No. 28
Clinton olished and Pointed	3-10 to 16 in. thick
Discount of the contract of th	Coal Sergen Iron
Gayloru Catolicus Golden Golde	214, 3, 314 and 4 inch. Angle Iron. 124, 134, 2 and 214
Locks and Knobs.	134 by 1 inch, for Plow Handles
No.  **Bouare Candle and Oll.  **No. 0, \$11750; No. 1, 12750 \$2 72 \(\to 2\) 100  Tubular.  **County Counts extra per dos. n.t.  Guards. 50 conts extra per dos. n.t.	8 lbs. to the yard2.90   20 lbs. to th
Guards 50 cents extra per dos. not.  Inwa Mowers.—Pennsylvanis	8 lbs. to the yard2.cc   20 lbs. to th  12
Guards. 30 cents extended on a 15.  Lawn Mowers.—Pennsylvanis	236 and 3 by 36 " 12 and 16 lb. 1 236 by 5-16 " 8 lb. Rail Frat Rails.—Punched and Count
State   Stat	2½ by 5-16 6 4 8 1b. Rail.  **Fat Raita—Punched and Count 1½ by 35 and 7-16 inch 1½ by 35 and 7-16 inch 1½ by 35, 7-16 and 35 inch  Juniata Nail Rods.  Norway  **Guard Iron, 7528/x36, and 7528/x36,  **Wayston, 16, and 3528/x36,  Drag Bars.  Dropper Bars.
Enterprise Mfg. Co. a Measuring Faucets	Juniata Nail Rods Norway Guard Iron, %x34x36, and %x36x36
Prass Liquor Cocks   dis 5 \ \( \frac{1}{2} \)	Drag Bars.  Cylinder and Landside Iron.
Woodruff	Plow Beam Iron.  Wood's Putent Planished Sh  1st quality (A)
American dis 25 g Stuffers dis 25 g is a Knterorise Stuffers dis 20 g Pianes Ohio Tool Co dis 25 d. to a	Galvanized Iron—America   Nos. 14 to 20
Balley	Nos. 25 and 2614c No. 29 Common and imperfect Juniata, 50 % 40&10 %.
New York Tool Co	Roofing Iron, Corrugated or Cr Galvanised Common.   E No. 207c net cash   No. 20
Branie   Adjustable	Bridge Iron, Carnegie Bros. & Co.'s list
Hunt's	Solid Wronght Iron Beams, 3 to 101/2 in. by 25
Steelysrds	Channel Bars, 1¼ to 10 in. by 30 ft
Lbs 50 100 120 200 25 300	Angle Ivon
Lbs 30 100 150 200 250 300	Equal Sided, 1x1 to 19(x1% in
Try Squares, Staticy	Sash Iron, 1942/423-to. Miscellaneous Shanes, various shapes
and Sharpened. Cipper No. 10, Bronzes Blade Boxed and Sharpened. Viper No. 5. Painted Red. Boxed and	Nails.
Sharpened dos \$7.25 net	rod to 6od\$2.35 4d and 5d 8d and 9d
Saws — Disstor's tissus, rance and stip	8( in 6.35 136 in
Rowland	1
Mrs. Potts' Parent	Finishing.   7.35   3 to 13
	rod to 3od
#heveis and Bendes  Rowland	Lining. 34 in
Manager Axe Stone " 5 @ 5%c net	Cut Spikes-All sizes  Boat Spikes-Cut
Flat Head Irondie 60 c	Slating.

-	
Brooms.—	4
	of a
Dy case	811c
Britannis, Boardmans	Sin Kn
Double Pointed Tacks dis 400.5 %	36 to 5-16
Genuine Oneida—Newhouse	Sol
Girard (Coe's Pattern)	Sof Lai Cir Rei Foi
₩ doz 10 to, \$3 00; 12 in., \$5 on et; case dis 5 x Coes' Genuine	Fin Cui
Bright or Ann'd, No. 19 to 36 dis 60 4 No. 27 to 86 dis 60 5 dis 6	Pla
Coppered to 18	Fu: Ho Gu
	Spi San Pir
PITTSBURGH.  Merchant Iron.	Ro. Spi
TERMS.—Note or acceptance at 60 days, with current rate of exchange on New York, or a discount of 1 per cent. for cash, if remitted within 10 days from date of invoice.  Flat Bar.	En 6 t
114 to 4 by 36 to 1 Inch	8 t 15 t 24 t
### Heavy Bands 3\(\frac{1}{2}\) to 6 by \(\frac{1}{2}\) and 5-16 \(\frac{1}{2}\) to 3\(\frac{1}{2}\) by \(\frac{1}{2}\) and 5-16 \(\frac{1}{2}\) and 5-16 \(\frac{1}{2}\) 3.80 4\(\frac{1}{2}\) by \(\frac{1}{2}\) and 5-16 \(\frac{1}{2}\) 3.80 4\(\frac{1}{2}\) by \(\frac{1}{2}\) and 5-16 \(\frac{1}{2}\) 3.50	Ste Th
3 to 6 by 16 to 3.16	WI
3 to 6 by ½ to 3-16. 2.30 3 to 6 by ½ to 3-16. 3.30 114 to 2½ by ½ to 3-16. 3.30 114 to 2½ by ½ to 3-16. 3.30 114 to 2½ by ½ to 3-16. 3.30 1 to 1½ by ½ to 3-16. 3.30 1 to 1½ by ½ to 3-16. 3.40 4 and ½ by 1½ to 3-16. 3.40 4 and ½ by 1½ to 3-16. 3.50 4 and ½ by ½ by 3-16. 3.50 94 and ½ by ½ to 3-16. 4.00 95 and ½ by ½ to 3-16. 4.00 96 and ½ by No. 11 and No. 12. 4.20 1400 1500 1500 1500 1500 1500 1500 1500	Re Ori
\$\frac{5}{6}\$ and \$\frac{5}{6}\$ by No. 11 and No. 12	dit fro be
36 and 19-16,   13 to 16.   4.2c     1 and 196,   13 to 17.   3.8c     154 to 2,   13 to 15.   3.4c     46 and 19-16,   17 to 20.   5.5c     56 and 11-16,   17 to 20.   5.5c     57 to 20.   5.5c     58 to 20.   17 to 20.   5.5c     58 to 20.   17 to 20.   5.5c     59 to 20.   17 to 20.   5.5c     50 to 20.   17 to 20.   5.5c	_
and 136	6 :
Dounds and Courses	26 26 26 26 30 30
to 174	34 36
\$\\ \text{to 2} \\	11 18 15 26 26
Horse Shoe.  54 to 134 by 5-16 to 74 inch	30 30 34 36
Sheet Iron, Charcoal, Juniata,	gla
No. 18 to 17. 3 50 4.00 6.50 No. 18 to 21. 50 50 50 6.80 No. 28 to 24. 4.00 550 7.00 No. 25 to 24. 4.00 5.00 7.00 No. 25 & 26. 4.00 5.00 7.00 No. 27 4.00 5.00 7.30 No. 27 4.00 5.00 7.30 No. 28 4.00 7.30 No.	H
All sheets No. 18 and lighter, over 30 Inches wide, not less than 2-100 extra.  Tank Iron.	
not less than 2-100 extra.   Tank Iron.	1
Angle Iron. 3.30	
114 by 1 inch, for Plow Handles	E
### Rail.  ### 8 lbs. to the yard	Br
8 lbs. to the yard2,0c so lbs. to the yard2,8c 12 " " 2.8c 28 " " 2.8c 26 " 2.8c 2	pla an
Flat Rails.—Punched and Countersunk.   1% to 2 by 3% to 3% inch	wi sei ch
Juniata Nail Rods	1
Cylinder and Landside Iron. 3.20 Plow Beam Iron. 3.00	Go Kr Bu
Wood's Putent Planished Sheet,   19t quality (A)	11
40&10 %.  RoofingIron. Corrugated or Crimned.	
Galvanised Common.  No. 20	
Beams and Channels.   Beams and Channels.   Beams and Channels.   Beams a storole in x30 ft.   Beams	ŀ
r in.xr in. to 5 in.x3 in	
Equal Bided, 1xx 16 1% x1% [1] # B 3.1e	1
Star Iron, 15(21) to 474. 3.10 Sash Iron, 15(25)-10 474. 3.10 Sash Iron, 15(25)-10 3360 Miscellaneous Shanes, various shapes, F B, 3.1 to 4.00 Special prices for large lots.	
6d and 7d 2.85   2d   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10   5.10	
### ##################################	ľ

rod 2.85 Each half keg	8d 9.10
Each half kee	6d to 7d 3-35
TERMSNote or acceptan	ce at 60 days; or a discount
of 2 per cent. for cash, if re	mitted within 10 days from
date of invoice. An abat	ice at 6 days; or a discount mitted within 10 days from ement of 10 cents per keg kegs or over.
anowed upon orders of 200	Aegs of over.
Sougre, Flat and	rel. Octagon Tool Steel. 7-32 and 4½ 5 ln190 3 16 and 5½ to 6 ln190 5-32 ln
36 to 2 in	7-32 and 414 5 in
5-16 and 216 to 3 in130	3 16 and 516 to 6 in190
54 and 356 to 4 in14e	5-32 in230
single and Double Shear No	auers—Same as Tool.
Knife, Tup, Die, Mill Pick,	Drill-Ordinary sizes120
Machinery 8 % to 2 in	steel-Round.
syn and alk to a in	7-32 and 416 to 5 in 100
% and 3% to 4 in	5-32 in
Cast Spring Steel:	156 to 3x5-32 to 3-16 in 70
1 to 4x¼ to ⅓ in 60	1 % to 1 %x5-32 to 3-16 in 80
Agricultu	ral Steels.
Solid Cast Steel Plow, 4 to	16 by 3-16 to % ln 6 e
Agricultu Solid Cast Steel Plow, 4 to 1 "Iron Center Plow," 4 to 1 "Iron Back Plow," 4 to 16x Soft Steel Center Plow, 4 t Landside and Cultivator, 6 Circular Plow Coulters, 5-3 Reaper and Scythe.	3-16 to 36 in 756c
Soft Steel Center Plow, 4 to	0 16x3-16 to % in 9 c
Landside and Cultivator,	C. S., 16 in. thick 816c
Reaper and Scythe	2 to ¼ in. thick to e
Cuttor Bars C. S.	
Finger Bar. Cutter Bars, C. S. Cutter Bars, C. S. German Sprin Cornstalk Cutter beveled Planters' Hoe, C. S. Hoe, C. S.	g Steel
Cornstalk Cutter beveled	to length 7 c
Planters' Hoe, C. S	8 с
Garman va to 16 Sheet	Steels.
German, to to 10 g 70	Common C'st, 17 to 20 g9c Best Cast, 10 to 16 g12c 17 to 20 g13c
Common C'st. to to 16 g. 8c	16 11 17 to 20 8120
Rolls and	Castings.
Furnace, Floor and Straigh	itening l'lates
Housings and Castings not	otherwise specified214c
Spindles and coupling how	ne 2360
Sand Rolls and Pinions, la	rge size1%c
Dine Will Coatt	17 to 20 g130   Castings   134c   14c   1
Rolling Mill Castings	
Spur and Bevel Wheels, in	rge
*** *** BII	natl4 e
Pulleys up to 30 inches	4 C
Engine Castings, light	3½c
heavy	3140
Chille	A Rolle.
6 to 7 in. diam., 7 to 20 in	i Rolls.
6 to 7 in. diam., 7 to 20 in 8 to 15 in. ' 8 to 40 in 15 to 24 in. ' 15 to 72 in 24 to 31 in. ' 72 to 108 i	long
24 to 24 in. " 15 to 72 in	L 44 C
72 to 108 1	n. "4 C
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6 X 8 to 10 X 15.  11 X 14 to 16 X 24.  18 X 26 to 20 X 50.  26 X 26 to 24 X 20.  26 X 26 to 26 X 26.  26 X 26 to 26 X 26.  26 X 26 to 26 X 24.  26 X 26 to 26 X 26.  27 X 26 to 26 X 26.  28 X 26 to 27 X 26.	12.00 13.75 17.25 19.75 21.00 23.25 24.00 25.75 27.75 29.25 33.26	11.00 12.50 15.75 17.25 18.50 21.25 22.50 23.25 25.00 27.75	10.00 11.75 14.00 14.50 15.75 17.25 18.00 10.25 81.73 24.00 27.75	10.50

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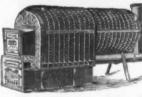


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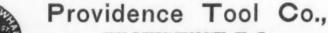
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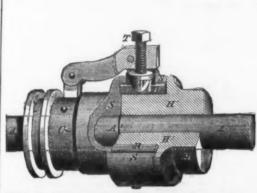


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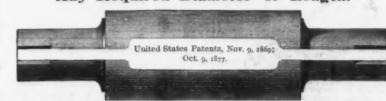
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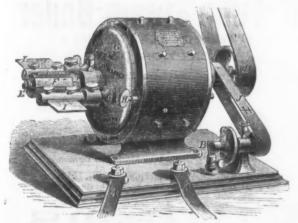
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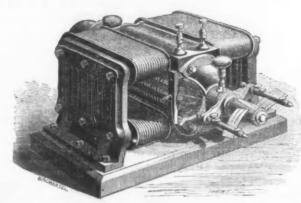
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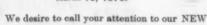
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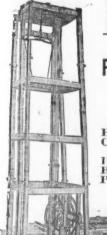
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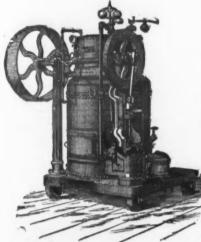
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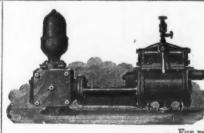
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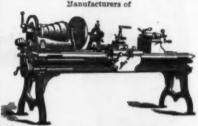
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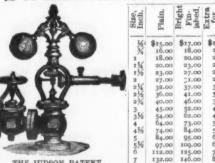
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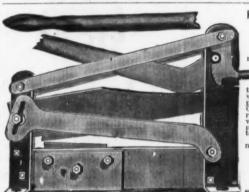
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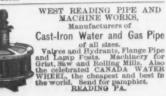
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